

# Railway Age Gazette

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THE New Jersey Public Utilities Commission finds that the derailment at Martin's Creek, April 29, was due to insecure track, but its report, printed in another column, does not cite the evidence on which the finding is based, or even name the witnesses who gave the evidence. The Pennsylvania Railroad appointed two committees, and the view of one of these committees is adopted by the commission; Mr. McKelvey, inspector for the commission holds this same opinion, and his opinion is endorsed, but nothing is said as to how soon he reached the scene of the accident; and an "outside expert," not named, also thinks the trouble was with the track, though he did not reach the spot until three days afterward. Thus we have a report which, very likely, is a fine example of Dutch justice, but which lacks a main element of simple fairness. As the rails, ties and ballast were

seriously disturbed by the derailed cars, and as, apparently, the persons whose opinions are relied on by the commission, did not see the track until hours or days after the accident—and after there had been time to do any amount of tamping—the main facts in which the public is interested are conspicuous by their absence. Trains running at moderate speed had passed over the track in safety. The difference between a track safe for only 30 miles an hour and one safe for 50 miles an hour is too delicate a question to be settled by any but careful and detailed testimony. On the question of the fire the commission finds that the acetylene tank (car 100) had been punctured, and that the Pintsch gas also contributed to the fire by reason of the pipes of the Pintsch tanks having been broken. The track having been insecure, a flagman should have been sent out. As the report says nothing to the contrary, we assume that the foreman thought the track secure, which explains his neglect to flag. The statement that an officer of the Pennsylvania holds flagging unnecessary must be a piece of carelessness on the part of either the officer or the commission, for no officer in his senses thus stultifies himself. Trains must be warned in the case of any work on the roadway that makes the track unsafe for regular speed. This is the universal rule. Nothing is said in this case about excessive speed, so that no blame attaches to the engineer.

THE state of New York proposes to establish a farm and industrial colony for tramps, a bill for that purpose being now before the legislature. The state already owns large tracts of land, and it is proposed to pick out a place where a farm of 500 acres can be established. One of the promoters of the bill says that a reformatory institution of this kind would result in a saving of money for the state, about \$2,000,000 being expended yearly for the maintenance of institutions for the confinement of tramps. The proposition is favored by Dr. Bailey, director of the state agricultural college. Why should not every state take action in this direction? State action, as distinguished from town and city action is a crying need. The efforts of the railways toward suppressing the tramp evil, which have been noticed frequently in these columns, make very slow progress. The action of railway officers almost always meets apathy if not opposition among local magistrates. From the *Utica* (N. Y.) *Observer* of a recent date we take the following:

"These two men were chased off a passenger train in Albany by an officer last night. They ran around the train, climbed aboard on the opposite side and came through to Utica without paying any fare."

Judge O'Connor's eyes brightened with happy recollections. "They showed pluck and perseverance," said the judge. "I like that kind of spirit. I remember that I was kicked off a train six times by railroad detectives in Chicago when I was broke in that city one time." One of the men was a plumber.

"Well, a plumber ought not to be broke so he will have to steal rides," said Judge O'Connor. "A plumber is like a burglar—if he can get three or four good jobs a year he doesn't have to work the rest of the time."

"I'm looking for those jobs now," said the man.

"You deserve a show, then," said the judge. Both men received suspended sentences.

From another town on the same railway a similar report recently came, the judge frankly avowing the old feeling, that any measure is justifiable which will evade expense and throw the burden on another town or county. That railways and telephones have obliterated local boundaries, making the whole world a small place, is an idea which, in orations and philosophical essays, is now generally accepted; but in actual practice, as in this matter of jurisdiction over petty crimes, we are still following the theories of a century ago. When it is plain that a tramp can commit an offense against society in a dozen different towns within a period of two hours, it is clear that something more effective than our minutely subdivided municipal machinery is needed to deal with the problem.

MUCH credit is due those in charge of the development of the freight station of the Missouri, Kansas & Texas at St. Louis (described in another column) for the very progressive step taken. While this country has been a leader in the installation of labor saving devices generally, such installations have been conspicuously wanting in railway freight stations.

The handling of the L. C. L. freight has undergone very little change during many years, although the cost has been increasing. Instead of following the beaten path in freight house layout, this station was designed in an entirely new way and the details were worked out with practically no precedent to follow. The design and construction show the results of a very careful study and mark an epoch in railway freight house building. The operation of the station will be very closely watched by railway men, and it is gratifying to learn that the results so far have far exceeded the expectation of the designers. Not enough freight has yet been offered to enable the plant to be run to its capacity, which is necessary to enable the greatest economy to be secured. The conditions existing at freight stations in general are far from satisfactory. They are almost uniformly congested and worked beyond their economical capacity, and the construction of additions is put off as long as possible because it means a heavily increased expense both in first cost, for additional land and buildings, and in operation, the cost of trucking increasing very fast with increase in floor area. The present expense of handling package freight is out of all proportion to the cost of handling other kinds, and it is in the handling of it that the greatest proportionate saving in the expense of freight transportation can be effected. The cost of terminal handling may be divided between the fixed charges, or the investment in land and plant, and the operating expenses, consisting principally of labor. Both these classes can be materially reduced by a mechanical handling system. With such equipment, the ground area required can be reduced in several ways as is illustrated by the case of the St. Louis station. Here the unloading platforms and driveways are on the upper floor, while the cars are on the lower, whereas in a one floor house they must, of course, be on one level. Again, the entire platform area on the upper floor, except the hatchway area, can be used for the storage of freight, as it is not necessary to keep open any runways for the truckers. All packages are elevated and carried over the freight on the floor without interference. The storage capacity is also greatly increased, for packages can be stacked higher and much more readily by machinery than by hand. The second, or labor expense will be greatly reduced because of the greater loads carried and because of the greater speeds possible. One telfer load averages as much as about four truck loads, and not only are the telfer loads so much larger, but many more may be handled in a given time.

**I**F the state railway commission of Mississippi has done anything to enhance the safety of railway travel, or of the work of railway employees in that state; or has in any respect improved the quality of the service rendered to the people by the railways, somebody ought to lay the fact before the public; for the commission itself (or whoever is working for it) seems to be able to think of nothing creditable to the board except its rate reductions and other blood-letting operations. This we gather from an account which appears in the *New Orleans Picayune*, wherein it is said that:

The Mississippi Railroad Commission, during three and a half years last past, with the late Frank M. Lee as its president, has accomplished among other things, the following:

Thirty-five per cent. reduction on crossties; 50 per cent. reduction on alfalfa and feed products grown at home; 60 per cent. reduction on peanut rate to the mills; rate on drain tiles reduced 25 per cent., which was most important to farmers; joint rates on long distance telephone messages reduced 25 per cent.; rates on petroleum reduced from third to sixth class; rates on grain and hay and milling in transit reduced; rate on cotton to Gulfport placed on parity with that to New Orleans, estimated to be worth millions to Mississippi; assessments on railway property materially increased, aggregating over \$5,000,000. Under the circumstances it is not unnatural that each member of the commission should seek re-election.

Were the rates on alfalfa, tiles, grain, petroleum, etc., so exorbitant as to justify the imposition on other commodities of the burdens which would be transferred to them by these great reductions on the commodities named? Since Thomas M. Cooley, in 1887, reached the conclusion that the function of the Interstate Commerce Commission was to get justice from the railways rather than to dispense justice without regard to what interests might be affected, evidences of the spirit of "the square

deal" in state commission decisions have been faint and scattering. The glittering generalities that have been so profusely scattered about by our great apostle of the square deal seem thus far to have had an effect, in railway regulation, quite similar to that of Mrs. Partington's broom with which she swept back the ocean. Assuming that the Mississippi Commission has been thoroughly independent and just in all things, it would greatly enhance the force of its statement to its masters, the voters (who are assumed, apparently, to desire nothing but to "beat" the railways) if the other side of the question were at least mentioned. Did the railways make any of those reductions willingly? If not, did they fail, after being allowed a fair chance, to justify the higher rates? Had their tax assessments been lower, proportionately, than those on property owned by others? A judicial body should be judicial even when it condemns a robber; and a judicial spirit is appropriate and praiseworthy not only on the bench, but in the issuance of press notices.

#### COLLEGE MEN AND RAILWAY WORK.

**I**N the class of 1911 just graduated at Yale College out of 308 men in the class 3, or less than 1 per cent., have chosen transportation as their life work. This is the "culture" department at Yale where it would perhaps be reasoned that a particular branch of business would not draw the new-fledged graduate. But Yale has her large scientific school, too, with its several branches of engineering. The returns for the living graduates of that branch show that less than 2 per cent., or 76 out of 4,019, are in the transportation business. Taking again the whole number of living Yale graduates of all departments numbering 14,806 and 200, or about 1.3 per cent., are all that are engaged in transportation. The returns for Yale are doubtless in a general way typical of those of most of the other American universities, certainly those of the Eastern States; and of the "transportation" group of graduates only a part are in the railway business. The generalization, therefore, seems to hold that the railway as a vocation does not attract the college man. Qualifying facts should, of course, be allowed for in the returns. Thus a civil or mechanical engineer, though working habitually on a railway line, returns himself probably as an engineer, and the same holds in a minor sense of other vocations allied with the railway. But the statement that the railway is in its vocational attractions non-academic still rings true.

The fact seems the more singular in view of some conditions that, on their face, ought to make the railway service and the college graduate congruous. Railway operation is closely joined to business in a broad sense—certainly is not in a technical sense professional. On its financial side it approaches the business idea still closer; and even the railway shops have a certain analogy to the factory. Now recent returns of vocations of young college men show a very different trend toward business. In one or two of our New England colleges which have only "culture" departments nearly 50 per cent. of recent graduating classes have chosen business as an occupation. The drift toward business has been variously accounted for, with the overstocking of some professions and a certain material and get-rich-quick tendency of the times cited as the leading forces. But whatever the cause one would infer that in the drift to concrete things of the college men the railway would have had a larger share. So, too, with the picturesque attractions of the railway service, its breadth, its variety, its large magnitudes, the fascination of such features as great locomotives and fast train service. These one would suppose to be alluring to the more or less imaginative average college man. So, too, in the social contacts of the railway service both internal and with the traveling public. The college is supposed to teach good manners; and certainly they are in these days no disqualification in the railway office.

Why, in the face of such natural magnetisms, so few college men choose the railway service is not easy to find out. But one can note some, at least, of the superficial causes. In a large number of the branches of the service there are certain fiscal



limitations. The various trainmen, with the conductor at the head, and the groups represented by engineers and firemen are highly paid at the top measured by the mechanical standard, but ill paid when measured by the standard of academic ambition. Business is apt to hold out higher ultimates, if not greater immediate rewards. Again, the theory of the railway service, more than perhaps any other, rests upon the idea of beginning at the bottom and the survival for promotion of the fittest after a struggle apt to be pretty long and stressful. Favoritism, on the whole, prevails in the service less than in almost any other calling, and even favoritism must face usually its responsibilities. It is a great vocation for trying out good men, but the tryout is protracted and arduous, save in some few lucky cases, and makes its beginnings low down. It begets the natural fear of the college neophyte that in the service, unless backed by some power higher up, he will become "rutted." Finally, there is presumptively in the eye of the college man, who otherwise would be willing to begin low down, the influence of the unions with their enforced equations of pay and resistance to the principle of individual efficiency. It affects other concrete vocations as well as the railways.

It will be interesting to watch, as time goes on, to see how far these resistances which, on the face of the statistics seem to be excluding college men from the railway service weaken or wax. The change, if it comes, however, is much more likely to be receptive to the college man than resistive. The railway, like other vocations of a "business" quality analogous to it, has a distinct call for his energies diverted from the athletic field, for his enthusiasms and for his high average standard of integrity and honor—without which the best academic mental training goes for nothing. It is just possible, too, that in the comparatively recent trend of the young college graduate toward business and affairs, and away from the professions, his first glance has been toward the foremost of them—mercantile life. In his secondary vision hereafter the attractions of the railway may fill a larger angle.

#### NEW BOOKS.

*Engineering Education.* Proceedings of the eighteenth annual meeting of the Society for the Promotion of Engineering Education. Edited by Arthur N. Talbot, Henry S. Munroe, and Henry H. Norris. Published by The New Era Printing Co., Lancaster, Pa. 450 pages, 5¾ in. x 8¾ in. Cloth. H. H. Norris, Secretary, Ithaca, N. Y.

This book is the secretary's report of the minutes, papers and discussions of the meeting held at the University of Wisconsin, Madison, Wis., June 23, 24 and 25, 1910. There were numerous papers presented, including the following: Efficiency in Engineering Education by Prof. Henry S. Munroe, Columbia University; Engineering Education in Germany, by Frank Koester, consulting engineer, New York; Inspection Trips, by Prof. Wm. T. Magruder, Ohio State University; Co-operative Work for the Wisconsin Railroad and Tax Commissions, by Prof. W. D. Pence, Prof. John G. D. Mack, and Prof. C. F. Burgess, University of Wisconsin; and Notes on the Co-operative System, by Herman Schneider, Dean of the Engineering College, University of Cincinnati.

The paper on Efficiency in Engineering Education is followed by a symposium of 100 pages on the same subject, in which many of the leading educators took an active part. George F. Swain, professor of civil engineering, Harvard University, criticized the college lecture system as a serious evil, maintaining that a text-book in the hands of the student with instructions as to how to study it was far more valuable. He strongly advocated a course in logic for the engineering student, and considers that Union College, by adding this course to its curriculum, has placed itself in the lead among our engineering schools.

Professor Schneider said that the list of applicants to the co-operative engineering courses at Cincinnati had grown and improved in quality so that even though the requirements for admission have constantly increased, the loss of students during the summer trial period has decreased from 40 per cent. in the first year to 8.1 in the last.

## Letters to the Editor.

### THE SUPERINTENDENT WHO IS ON TO HIS JOB.

Montana, Wyoming & Southern Railroad Company.

BELEFRY, Montana, June 12, 1911.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Referring to the communication from Mr. Fritch in your issue of May 26, page 1193, under the caption "Inventory of Labor on Railways," I cannot agree with Mr. Fritch as to his proposed new department—a general "Smelling Committee," as such committees are commonly termed.

The communication states that little attention is paid to the matter of taking an inventory of labor. This is probably a fact in some remote instance; but I know from past experience on very heavy divisions, that the labor question was one of my most ardent and continuous duties, and it is a fact with every division superintendent, who is on to his job. The fluctuating traffic of all through lines absolutely requires constant activity on the part of the division superintendent, if the system is not departmental. The superintendent is, or should be, competent to economically operate his division and keep up with the various changes that constantly occur. The fact of a committee investigating him from time to time is at the least distasteful and not conducive to good organization. Every time the committee would make a trip, the "stove committee," which is permanent on all railways, would infer that there was something lacking in the old man's management. My experience also indicates that a wide-awake general superintendent or general manager is a successful taker of "labor inventories." He is competent, or should be, to make any necessary corrections and report to the president.

Mr. Fritch might think a minute, and I believe he will agree with me that the present executive head of his road *can* and *does* digest a "labor inventory" (payroll) as quickly and thoroughly as anyone he has come in contact with.

The communication further states, "The formation of such a department need not necessarily infringe upon any other department. . . . Departments of railways are so busy with their own affairs that there is not sufficient time to properly go into the merits of every expenditure to determine whether it is proper or extravagant." Such a committee would certainly infringe, and in fact, I believe would cause discord in the entire organization from the general manager down. I cannot imagine anything else, when to justify the new department, or in other words, have some people *think* they are earning their salary, they must do something. They must ignore the judgment of the general manager or general superintendent and his division people by disagreeing or condemning their judgment on something or other. I believe this would be infringement; yes, more than infringement; it would be conflict.

Proper organization holds the division superintendent responsible to his superior officers for all expenditures; hence he must not be too busy to supervise all important matters as well as minor details. He has his staff of trainmasters, master mechanics, division engineers and others always on the alert. When it comes to large expenditures, new work and the like, it is frequently necessary to provide him with additional assistance; and he dispenses with this assistance, as soon as the work is complete, without the advice of a committee. This would also apply to employees in train, station or other service.

M. W. MAGUIRE,  
General Manager.

The German Government Railway management is experimenting with the electrical operation of freight and passenger trains in the Bitterfeld district of the Prussian province of Saxony. About 16 miles are now in operation. When completed the line will be 96 miles long and will form part of a through route between Magdeburg and Halle.

# LETTERS FROM AN OLD RAILWAY OFFICIAL TO HIS SON, A GENERAL MANAGER.\*

## V.

TUCSON, Arizona, May 6, 1911.

My Dear Boy:—I have had a good deal to say to you at one time and another about chief clerks and the chief clerk system. From actual experience as a chief clerk I know that it is a trying position. It is because the railway chief clerks of the country are as a class such a splendid body of men that I am trying to do what I can to help them. Too many times a chief clerk misses promotion because he is such a valuable man that he has to stand still to break in all the new bosses who come along and leave him in the side track.

The chief clerk system as we know it today cannot long survive because it is too feudal in conception to reflect the spirit of a progressive age. We need a chief clerk to be a head clerk, a senior clerk, a foreman of the office forces, as it were. Much of the time on American railways the chief clerk is in effect an acting official, acting trainmaster, acting superintendent, acting general manager, acting vice-president, and even acting president. As such he signs the name of his boss, the theory being that the latter, like a feudal baron or a king, is omnipresent within his own dominions. Not only does this outgrown conception violate the fundamental laws of matter; it often borders upon a breach of honor, integrity and good faith. Legal fictions are fast giving place to the law of common sense. Railway officials should not risk arraignment before the bar of public opinion for such indefensible practices.

When the chief clerk does business in the name of some one else the effect is dwarfing to all concerned. We do not get the effect of either one or two men, but that of a fraction of both. Again, the chief clerk is handling important correspondence with officials below of higher rank than himself, of greater compensation, and presumably of wider experience. Human nature is such that sooner or later the chief clerk, a junior, is telling an official, a senior, where to head in. Among the hundreds of railway officials with whom it is my proud privilege to claim acquaintance, I have found nearly every one flattering himself, "My chief clerk never makes such breaks." To avoid awkward and embarrassing silences, I am learning to discontinue the acid test, "How about your boss's chief clerk?" So widespread a belief indicates a generic trait of human nature rather than a sporadic condition. Organization as a science seeks by proper checks and balances to minimize such amiable failings of human nature. Organized society preserves the effectiveness and dignity of its courts by allowing only a duly qualified judge to administer justice. The old clerk of the court may really know more law than the young judge, but only the latter can sit on the bench and decide causes. The lay reader must be duly ordained before exercising the full functions of a minister. The man who uses another's autograph signature in the banking business becomes a malefactor. Are we so different in the large corporations that we can with impunity ignore such safeguards?

The chief clerk system had its origin when railways were small and officials were few. On a division, for example, the superintendent was perhaps the only official and by common acceptance his clerk was really the next in rank. When a small tradesman or a small farmer goes away for a day his wife and boy may do the work without any one knowing the difference. In a larger enterprise there has to be an understudy in charge when the head is away.

You may have noticed that I use the word "rank" considerably. Rank is a practical necessity for the proper enforcement of authority. Rank makes its appearance as soon as society organizes for its own protection. Rank may be local, limited, changing and temporary as contra-distinguished from general, extensive, hereditary, or permanent, but it is rank just the same.

The purest democracies clothe their chosen leaders with temporary rank. Before misconstruing the poetic aphorism of Robert Burns, "rank is but the guinea's stamp," remember that the guinea is only fluctuating bullion until the stamp or authority of government can be invoked.

Let me now enunciate a principle, which is this: "In modern organization the chief clerk as we now know him has no place. When the stage is reached that such a chief clerk seems to be needed, there should be another assistant this or that." Mind you I do not say assistant *to*, because that little word "to" may give a sent-for-and-couldn't-come appearance. Nearly every week you notice the announcement of the appointment of an old chief clerk to the position of assistant *to* somebody. This is encouraging, since it permits him to do business in his own name. It also shows that railway officials are waking up to the distinct limitations of the chief clerk system. The discouraging feature is the failure to profit by centuries of experience of such well-handled activities as the navy and the merchant marine. At sea the executive officer ranks next below the captain, and is in effect, though not in name, the latter's chief of staff. The captain's clerk or the purser cannot hope to become executive officer and then captain without getting outside and working up through the deck. When railway executives and directors become better students of organization, the science of human nature, their stockholders will pay for fewer unnecessary experiments. One railway will profit by the discoveries and mistakes of another, as to bridges and equipment, but rarely as to organization and methods.

The United States Army, copied largely from the English, has the assistant *to* system, calling such officer the adjutant. The rank of the adjutant has been raised to captain, or rather the grade from which the colonel can select his adjutant, has been elevated to that of captain. The adjutant has thus gained and many military men hope that he will eventually be the lieutenant-colonel and as in the navy, be the executive officer, and in effect, chief of staff for the colonel. Since no officer of the army or navy permits another to sign his name the adjutant uses his own autograph signature but preceded by the phrase, "By order of Colonel Blank"; objectionable because it is sometimes a legal fiction. The adjutant system in the army works better than the assistant *to* system on the railways, because the adjutant is relatively better trained for his position. Not only does the adjutant know office work, but he has learned practically to perform every duty required of non-commissioned officers and private soldiers. Very few assistants *to* could run a train, switch cars, handle a locomotive, or pick up a wreck. This is why soldiers and sailors have more faith in the ability of their officers than railway employees have in that of their officials. He who would be called Thor must first wield Thor's battle axe. We should office from the railway rather than railway from the office.

Since these things are so, as runs the old Latin phrase, I would recruit my office assistant from the road, from the head of a so-called department, from an official who has gained a face-to-face experience in handling men. The old chief clerk is the first man I would consider for appointment as one of my junior assistants. I would so assign him that he would get outside experience. Sunburn and redness of blood sometimes go together. For the pink tea contact of the telephone, for the absent treatment of the typewriter, I would ask him for a while to substitute the strong coffee of the caboose and the surprise test of the through freight. Office railroading has its origin in the mistaken theory of overspecialization, that office work is a highly-segregated specialty beyond the ken of the average man. The world advances and as education becomes more general, as tenure is made more permanent, and employment more attractive, we can impose increased requirements. Suppose that it all could be so worked out that a generation hence no man would expect to be a railway clerk until he had served some such outside apprenticeship as trackman, brake-

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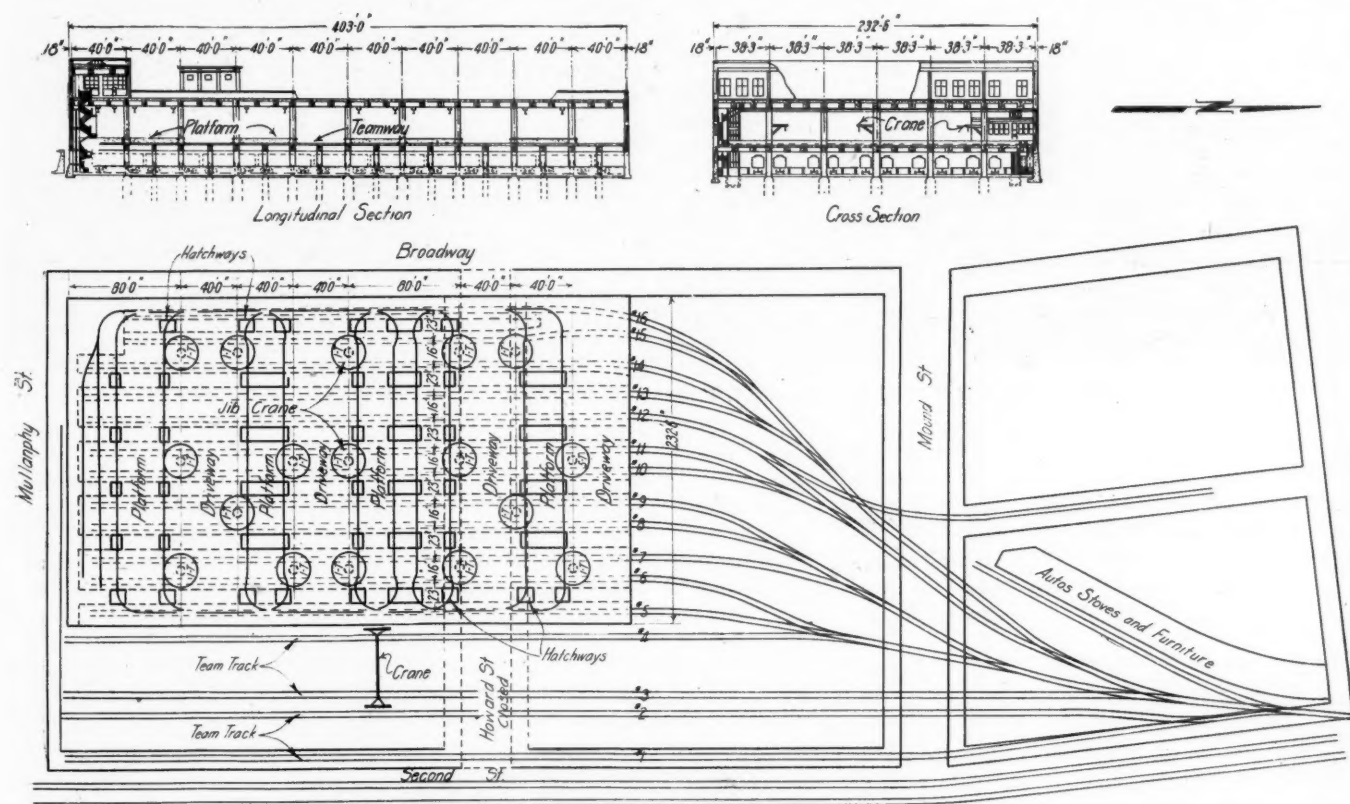
man, switchman, or fireman, etc. This would mean that in an organization like the post office department every clerk in the department in Washington would have been graduated from some such outside position as letter carrier, railway mail clerk, country postmaster, rural free delivery carrier, etc. Every clerk in the war department would be a soldier and every clerk in the navy department a sailor. Then the papers that the clerk handled would have a living meaning for him. His action would be more intelligent. Pardon me a moment while I shake hands with the highly-conventional gentleman who is approaching—Mr. Cant B. Dunn. No introduction is necessary. We have met all over the United States, in Canada and in Mexico. We usually differ, but never quarrel, because each is so necessary to the other.

Sure, my boy, all these things can't be done right away quick, or before the Interstate Commerce Commission again asks for increased authority and larger appropriations. I do not expect to live to see the consummation, but hope that you may. I do expect to survive long enough to see a good start made along such rational lines of elasticity. Because we cannot accomplish it

### M., K. & T. FREIGHT HOUSE AT ST. LOUIS.

The Missouri, Kansas & Texas has just completed the construction of a large freight terminal at St. Louis, which is attracting much attention, because of the adoption of a comprehensive telpherage system for handling the freight. This is the first installation of the kind in the country for handling this class of freight from the wagon to the car, and with the exception of that at the Baltimore & Ohio pier at Baltimore, Md., it is the first telpherage system to be installed for handling freight at a railway freight terminal.

This freight house is located on the east side of Broadway, between Mullanphey and Mound streets, and is 403 ft. long by 232 ft. 6 in. wide. The building consists of the basement, or track level, and the first floor or driveway level, while a third floor has been built across the two south bays the entire width of the building for office purposes. A temporary roof of wood covered with a composition roofing, has been put on until the rest of the third and fourth floors are put up, the building being designed for these additional floors. The framework of the



Missouri, Kansas & Texas Freight House, General Plan.

all at once is no reason for not making an intelligent beginning. If a compromise with principle is ever advanced its advocates should be prepared to pay the ultimate cost. Those questions on which the Federal constitution compromised required the expensive settlement of civil war. Otherwise the constitution has been elastic enough to cover nearly fifty states as fully as the original thirteen. It is even strong enough to withstand the latest political fallacy, the recall of the judiciary, as solemnly proposed out here in fascinating Arizona.

Remember always, my boy, that although the good old days have completed their runs, there are better days arriving and still on the road; that beyond the terminal of the vanishing point of the perspective, the best days are coming special because no railway time table is big enough to give them running rights.

Affectionately your own

D. A. D.

building is of steel, with reinforced concrete floors, brick exterior walls and Fenestra steel window sashes.

The fact that this freight house is situated on a side hill, with tracks (on the east side) on the level of the basement floor, and with Broadway on a level with the second floor level, was of advantage in the design of the terminal; but this is practically the only difference between the natural conditions existing at this and other freight houses. Being near the center of the city, and the value of the ground being high, it was important to restrict the area as much as possible; and it was decided to install modern labor-saving devices. For these reasons the telpherage system for handling freight was decided on.

The basement, or track level floor, is given over entirely to track and intermediate platforms. Twelve tracks are provided, which enter the north end of the building, and are stubbed at the south end. They are arranged in pairs, spaced 16 ft. center

to center of adjacent tracks, and 23 ft. between pairs with a platform between. The two east tracks are planned for inbound freight, while the other 10 are used for outbound. The total car capacity within the building is 117 cars. In addition, there are three tracks east of, and parallel to, the house with a capacity of 60 cars to provide for team track freight. An overhead crane of 12 tons capacity traveling the length of the building,

inside where the men and goods are protected from the weather. The driveways are all paved with creosoted wooden blocks to reduce the noise to a minimum. The freight is received and sorted on two platforms 42 ft. by 217 ft. long, and two 82 ft. by 232 ft. long.

Seventeen jib cranes are installed, three of which are of 5-tons capacity, and 14 of one ton capacity, to lift heavy articles



New Freight House of the Missouri, Kansas & Texas at St. Louis; Broadway Side.

extends over the two tracks next to the house, serving 20 cars. On the second, or Broadway level, four driveways are provided, each 38 ft. in width, which are entered directly from the street on a level grade. Raised platforms are built between these driveways, providing 1,600 ft. of wharfage along which the wagons may stop and unload. No provision is made for unloading or handling freight outside the building, all this work being done

from the wagons to the scales and then to the telpher trucks. Twenty Winter-Coleman automatic scales have been installed. Most of the freight from wagons passes over these scales and is weighed before being picked up by the telphers. After the freight is weighed the telpher picks up the truck and lowers it through one of the 57 hatchways to the large platform below. It is possible to drop this truck beside any one of the 117 cars,

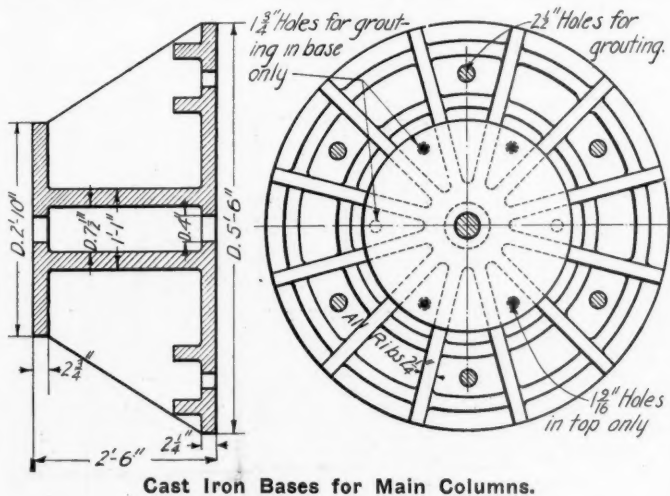


Missouri, Kansas & Texas Freight House, St. Louis; Track Side.



when the truck can be pushed into the car and turned within it.

For inbound freight the operation is reversed. The truck is loaded in the car, wheeled out on the platform, lifted up through the hatchway by the telfer and deposited on the upper platform. Eleven of these hatchways extend under two telfer tracks, so that articles too long to be handled through the small hatchways can be lifted jointly by two machines on parallel tracks. Pneumatic tubes are installed at several points within the house to convey bills and slips to the billing office on the third floor. The arrangement of the tracks and platforms on the lower level and of the platforms, hatchways, driveways and monorail crane runways, are illustrated herewith. The machinery for this freight handling system includes 18 electric telfers or monorail cranes,



12 runway switches, runway conductor, grapples and flatboards or trucks in addition to the 17 jib cranes mentioned above. Sixteen of the monorail cranes have a rated capacity of two tons, and two a capacity of 6 tons at 60 ft. per minute, the height of lift being about 30 ft. Two drums are mounted on the same shaft, and two hooks are employed, this arrangement being adopted in connection with the grapples described below to prevent excessive swinging or twisting of the load. Each of the two trolleys is of the 4-wheel type and is equipped with a motor geared to give a traversing speed of 500 ft. per minute. The gears are enclosed wherever practicable to reduce the noise. The trolley motors are provided with magnetic brakes and the hoisting motor with magnetic and load brakes. The cranes are operated from a cage hung at one end and below the main body of the machine in which are located the controllers and the control resistances, one controller for the hoist motor and one for the two trolley motors. Two switch control levers on opposite sides of the cage, and equipped at one end with contact shoes, enable the switch control and runway conductors to be energized and the switch thrown to the right or left as desired.

The runway consists of over 2,700 ft. of 18-in. 55-lb. I-beam, exclusive of switches. To the upper surface of each half of the lower flange, but separated from it by a wooden filler tapered so as to give a horizontal seat, a 20-lb. T-rail is bolted, these rails forming the running rail for the cranes. In addition to providing a horizontal seat for the rail, the wooden filler greatly reduces the noise of operation.

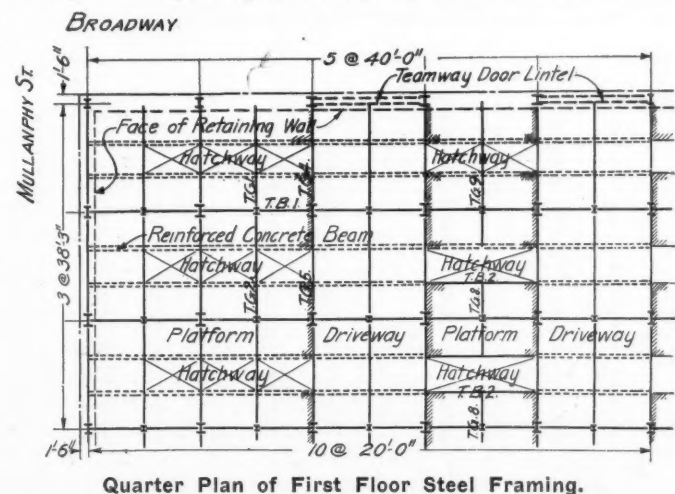
The switches are motor operated and controlled from the monorail cranes by means of the levers previously referred to. They are of two types, having two or three tongues or arms, respectively, depending on the number of runway branches to be connected. The tongues consist of 18-in. 55-lb. I-beams angularly located with respect to each other. The upper flanges are rigidly framed together and the whole structure is arranged to move at right angles to the runway. The three-tongue switch thus enables connection to be made from either of two branches on one side of the switch to either of two branches on the other side. The motion of the switch is obtained through

the medium of a motor-operated screw passing through a nut secured to the switch framing, the motor being connected through a controller to the switch control runway conductors. The present arrangements provide for all the cranes to be run in the same direction.

The switch control runway conductors and the main positive conductor supplying current for operating the cranes and switches consist of lengths of angle iron spliced together and hung from insulators attached to straps clamped to the upper flange of the runway beam. The negative crane supply is the grounded runway beam itself. The positive conductor is interrupted at the switches and the gap bridged by the two shoes with which each crane is equipped, so that there is no interruption in the current supply. Each of the switch control conductors connected to a switch corresponds to a given position of the switch and the energizing of the conductor causes the switch to take this position. The switch continues to move as long as the control lever shoe is in contact with the conductor, or until the switch reaches the proper position. When this occurs an indication is given by a lamp located at the far end of the conductor. The length of the switch control conductors is such that the switch is enabled to move between its extreme positions before the crane reaches it.

The 17 jib cranes are each equipped with one motor for hoisting, the rotating and trolley motions being made by hand. The height of the runway is such that the monorails, with suspended flatboards, have ample clearance in passing over these cranes. The one-ton cranes have a hoisting speed of 15 ft. per minute, and the five-ton cranes of 21 ft per minute.

The flatboards, or trucks, into which the freight is loaded to be picked up by the monorail cranes, are made of steel, and are 6 ft. 6 in. long and 4 ft. wide. The truck platform is about 10 in. above the floor level and rests upon two wheels placed underneath at the centers of the two sides. Castors are provided at the end, enabling the truck to be turned readily. Pockets for stakes are placed along the side, giving the truck a capacity of about 110 cu. ft. The trucks are designed to bear a weight corresponding to the capacity of the monorail cranes.



They are picked up by means of grapples, which engage with pins at the sides and near the ends of the truck platforms. These grapples are arranged to disengage automatically when the truck is deposited upon the floor. Under the terms of the contract this machinery is guaranteed to move 1,000,000 lbs. of freight in five hours from where it is dumped by the wagons on the platforms on the upper floor to points directly in front of the car doors on the car level platforms.

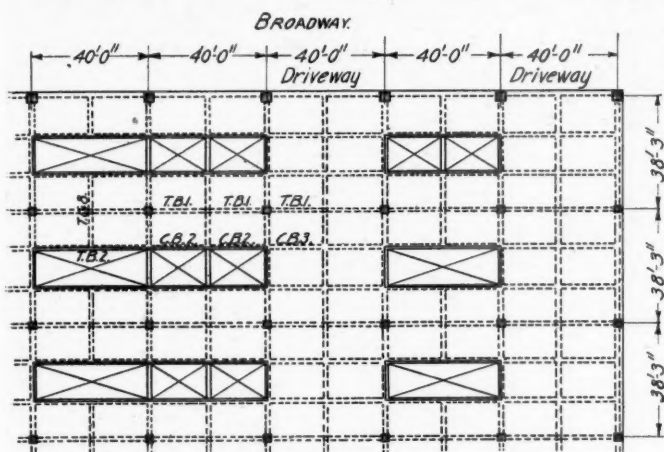
Some unusual structural features resulted from the exceptionally large panels required to accommodate freight cars and intermediate loading platforms in the basement, and provide generous spans and headroom in the first story in which to operate the electric telfers. The story heights are: basement (track





level) to first floor (driveway level) 20 ft.; driveway level to second floor level 33 ft. 10 in.; second to third floor 21 ft.; and proposed third floor to low point of roof 20 ft. The column spacing across the building was fixed at 38 ft. 3 in. by the width required for two lines of freight cars and an intermediate platform 11 ft. 3 in. wide to each bay. The column spacing longitudinally was made 40 ft. to correspond to an ordinary car length. While the main columns are spaced 40 ft., this spacing is reduced below the first floor to 20 ft. by placing short columns in the basement only, so that the basement panels are 20 ft. x 38 ft. 3 in.

The first floor is carried on steel plate girders having a depth



### Quarter Plan of First Floor Fire Proofing.

of 34¼ in. back to back of angles. The total depth of the first floor construction, including the creosoted wood block flooring of the driveways and the concrete fireproofing, is 4 ft. The platforms are 3 ft. 9 in. above the driveways, and also have a flooring of creosoted wood blocks laid on a 1 in. sand cushion on top of the concrete.

As all of the steel work was to be encased in concrete, it was practicable to substitute in the first floor 3,200 lineal feet of reinforced concrete beams of 20 ft. spans in place of steel plate girders, thereby effecting a large saving. The details of these concrete girders are referred to later.

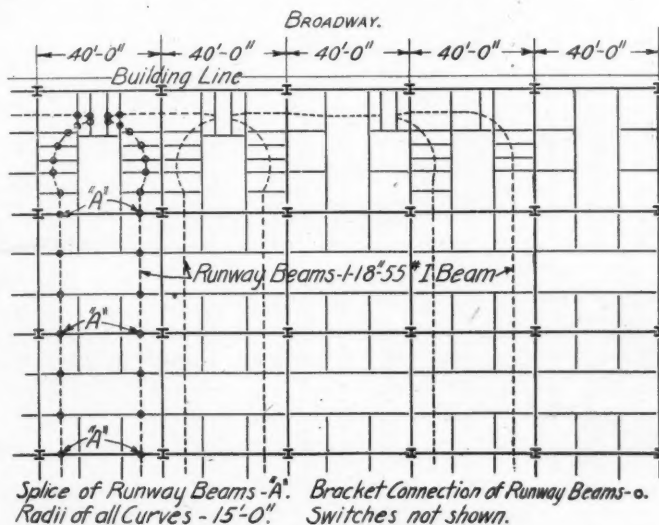
The columns are supported on concrete piers carried to bed rock, which was found about 20 ft. below the basement level, or approximately 40 ft. below the street level. These piers are 6½ ft. in diameter for the main column and 4 ft. in diameter for the short columns.

The cast iron bases for the main columns are circular, having a height of 2 ft. 6 in., and a bearing surface on the concrete 5 ft. 6 in. in diameter. These castings weigh about  $3\frac{1}{2}$  tons each, and special provision was made in their design to insure a uniform bearing when set in place. A large hole was provided in the center of the top plate for grouting through, and a corresponding hole below it on the bottom plate. Twelve additional holes in two concentric rings were also provided in the bottom plate. The method for setting these castings was to support them temporarily on hard wood wedges in correct position and then after putting a clay dam around the bottom edge, pour cement grout through the large hole in the top of the casting, filling the large cylinder in the center and gaining thereby considerable hydraulic head to force the grout under the casting until it rose through the 12 holes provided in the base. In order to strengthen the base two concentric vertical ribs were cast, as shown.

A retaining wall 25 ft. high and over 400 ft. long was required along the Broadway side of the building. This is a reinforced concrete cantilever wall and is supported on concrete piers or caissons 20 ft. apart carried to bed rock, the tops of these piers being enlarged to 9 ft. in diameter. The base or footing of the wall is 12 ft. 6 in. wide, as shown. The main

wall columns are embedded in this retaining wall 40 ft. apart and rest on castings directly on the fall footing above the piers. As the wall was started before the steel work was delivered, the plans provided that the wall should be built above its base in sections with joints near the columns, while the base of the wall, with its continuous steel bar reinforcement, was built continuously without joints. As no transverse bracing could be introduced in the building, it was of prime importance to design a retaining wall that would not move forward under earth pressure and bring thrust onto the steel work.

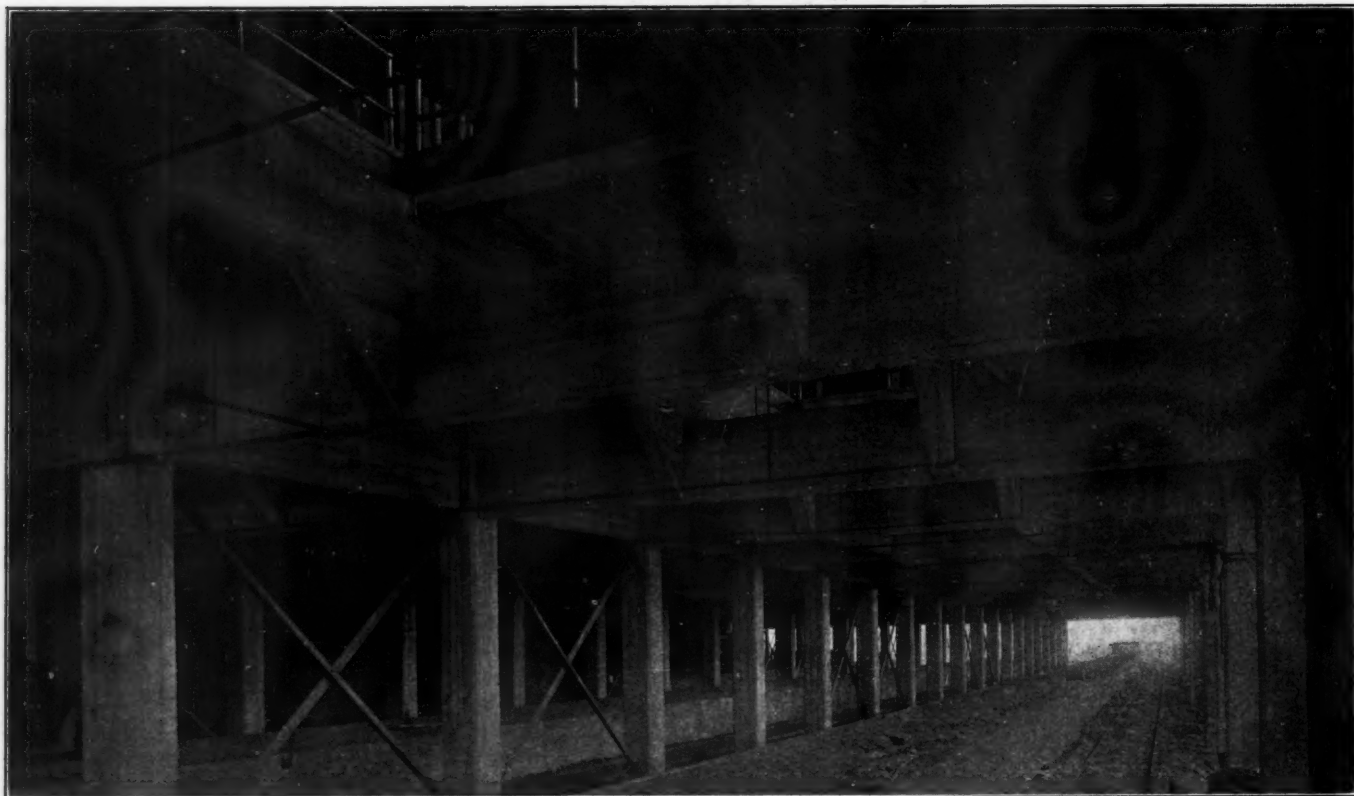
One-quarter plans each of the steel framing plan, of the fireproofing plan of the first floor, and the steel framing plan of the second floor are shown in three of the illustrations herewith. The full lines on the steel framing plan of the first floor indicate the structural steel girders and beams, and the dotted lines on this plan show the reinforced concrete beams. In the first floor, as has been mentioned, the panels are 20 ft. x 38 ft. 3 in., and steel plate girders are used for the 38 ft. 3 in. spans, and also to connect between the columns on the 20 ft. spans, but the intermediate 20 ft. beams are of reinforced concrete. As will be seen from the plan, provision was made for single and double hatchways, and an unusual feature was introduced in the framing plan where the double hatchways occur. The plate girders T. G. 8 are continuous over a supporting column at the center so that the top flanges of these girders are in tension. The girders T. B. 2 are therefore supported at their centers by the girders T. G. 8, thus reducing the spans of the girders T. B. 2 from 40 ft. to 20 ft. for dead load and for at least part of the live load. The design of the reinforced concrete girders is illustrated. Each flange in the structural steel beams T. B. 1 of 20 ft. spans consists of two angles  $3\frac{1}{2}$  in. x  $3\frac{3}{4}$  in. x  $\frac{7}{16}$  in., and one cover plate 8 in. x  $\frac{3}{8}$  in. The web plate is 30 in. x  $\frac{5}{16}$  in., while the net area of the flange is 6 sq. in. The area of the four reinforcing bars in the concrete girders is 4 sq. in., these girders being calculated for a moment equal to  $WL^2 \div 12$ , the reinforcing being continuous over the supports.



**Quarter Plan of Second Floor Steel Framing.**

It was originally intended that the first floor should all be on the same level as the driveways, and that the raised platforms should be of temporary construction, so that they could be readily changed in position or size, if experience showed it desirable to change them. After the plans were made and work had progressed, it was decided to raise the level of the concrete floor between driveways to the platform level. As the steel work was well advanced, no changes were made in it, but concrete walls were built on the girders where the floor was to be raised.

The main columns are 54 ft. 10 in. long, extending from the foundations to the level of the second floor, and were designed to be encased in concrete, which was depended upon to add to



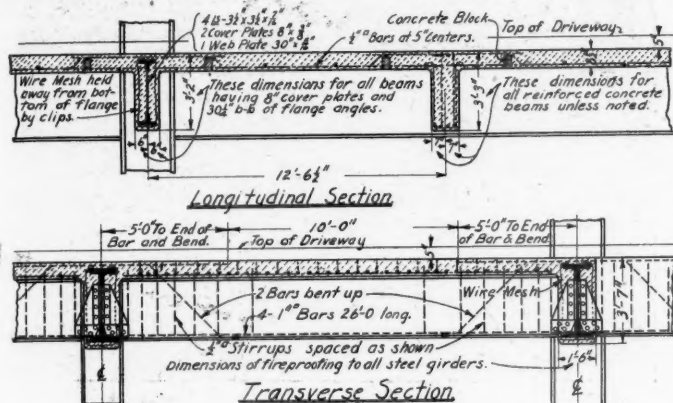
Lower Level.



Interior of Freight House, from Street Side.



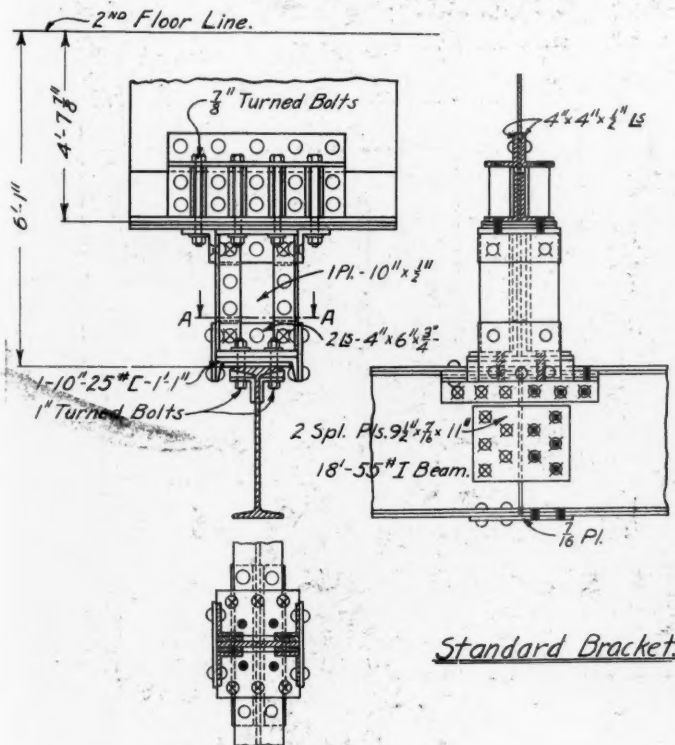
their stiffness. The section consists of four angles 7 in. x  $\frac{3}{4}$  in. x  $\frac{3}{4}$  in., with a 16 in. x  $\frac{5}{8}$  in. web plate. In the basement they have two plates 9 in. x  $\frac{3}{4}$  in., 2 plates 14 in. x  $\frac{3}{8}$  in., and 4 plates 21 in. x  $\frac{7}{8}$  in., the 21-in. plates extending the full length of the columns, and making a total area of section of 137 sq. in. Each column weighs about 12 tons. It was originally intended to splice the columns 1 ft. 6 in. above the second floor line, but



Section of Re-inforced Concrete Girders.

later it was decided to raise the second floor 1 ft. 6 in.; therefore the splice plates for the second story columns were put on the columns and the second floor girders all connected onto the columns 1 ft. 6 in. higher than first planned, so that the change was made in the second floor without involving any material expense.

The dotted lines on the framing plan of the second floor indicate the location of the runways for the electric telfer system.

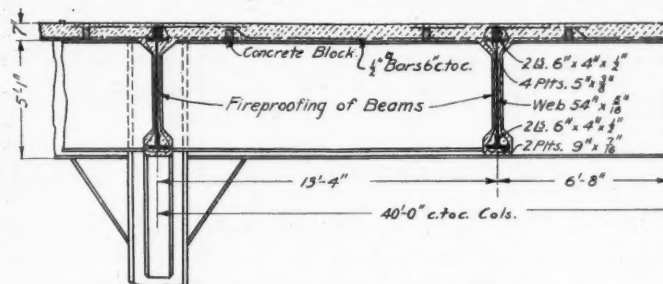


Section AA

Details of Hanger for Runway Support.

These runways are 18-in. steel I-beams bent to the required curves and connected to the structural steel girders by special hanger brackets where indicated. Where runways are curved, it was necessary to put in additional beams in the second floor to support the runways, these additional beams being clearly indicated on the plan. Special details were required to accommodate the switches which were a part of the mechanical equip-

ment. In order to support these 18 in. runway beams from the floor girders, a special type of hanger, shown herewith, was designed, this hanger to be of sufficient strength to take care of the load coming on 13 ft. of the runway beam. In addition to the vertical load on the runways, the hangers were designed to be strong enough to take care of the impact and lateral thrust from the telfers. As the floor girders were to be encased in concrete and as the system of overhead sprinkler pipes was to be placed above the telfer runways and below the concrete fireproofing, the hanger brackets for the runways were of greater depth than would ordinarily be required. Great care was taken



Section of Second Floor Longitudinal Slab.

to design these hanger brackets so that they would be even stronger above the line of the fireproofing than below, so that in case any repairs became necessary such repairs could more readily be made. It will be noticed that the upper flanges of the runway beams were strengthened where the beams connect to the hanger brackets, by riveting two pieces of angles to the web of the I-beam just below the top flange and placing between these angles and the flange wedge-shaped plates held in place by the 1 in. turned bolts connecting the hanger brackets to the telfer runway. The telfers run on two steel rails bolted to the upper sides of the lower flanges of the 18 in. I-beam runways. These brackets were designed so that the connections could be made for the curved beams as well as for the straight



Five-Ton Crane.

beams by varying the position of the holes connecting the brackets to the floor girders.

The second floor girders are 4 ft. 6 in. in depth, back to back of angles, the total depth of this floor construction being 5 ft. 1 in. In this floor the top flanges of the steel girders depart from usual practice, the flange angles being riveted to the webs with their outstanding flanges down, forming a better support for the concrete slabs, and reinforcing bars, as shown.

The height of the first story from the level of the driveways on the first floor to the level of the second floor is 33 ft. 10 in., and the clearance between the under side of the telpher runway beams and the driveways is 26 ft. 3 in., and from the underside of the telpher runways to the level of the platform 22 ft. 6 in. This clearance is required for the operation of the telfers above the jib cranes, which were placed at the columns along the edges of the platforms.

While the design of the structural steel columns was based on a building having two floors and a roof above the first story, the second and third floors and the permanent roof have not been put in, except that part of the steel work for the third floor across the south end of the building has been built, and a temporary roofing has been placed on this steel work, and on the steel work of the second floor over the remaining area of the structure. The total weight of the structural steel and iron castings for the building up to and including the second floor and the portion of the third floor which is erected amounts to approximately 3,500 tons.

The building is lighted by 132 d. c. luminous arc lamps. The 100-kw. motor generator sets, driven by 4,000 volt, three-phase, 60-cycle, synchronous motors, with direct-connected exciters, are installed on the mezzanine floor, using power bought from the Union Electric Light & Power Company, St. Louis. A very complete switchboard controlling both the arc lamp and monorail crane circuits, has been provided, the lights using 125 volts, while 250 volts are provided for the cranes. Directly below the motor



Two-Ton Crane.

generator sets the boilers for heating the building are installed.

The amount of freight now being handled amounts to about 800,000 lbs. daily, or about 3,500 average truck loads of 225



Telfers.



lbs. The telfers will average about four times this amount on each trip, and will reduce the movement to about 900 loads. The cost of handling this freight by trucks has been about 45 cents a ton, and it is expected that after the plant has been in use this will be reduced to at least 30 cents.

Just across Mound street from the main building a reinforced concrete furniture and automobile shed, 24 ft. x 225 ft., has also been built. Track room has been provided alongside for seven cars, although with more than five cars on the track it is necessary to foul the lead into the freight house. The location of this building at this point was made necessary on account of the difficulty in securing certain pieces of property.

The total expenditure, including right of way, buildings and track, is approximately \$3,000,000. All track work was done by the railway company, while the building and equipment were contracted. The steel work for the building was fabricated by the American Bridge Company, New York, and the structural castings were made by Christopher & Simpson, St. Louis. Reinforcement was furnished by the Corrugated Bar Company, St. Louis. The building was erected by James Stewart & Co., St. Louis. The mechanical freight handling equipment was installed by the Sprague Electric Works, New York, while the General Electric Company, Schenectady, N. Y., installed the electric power plant.

The design and construction of this terminal have been under the direct charge of S. B. Fisher, chief engineer of the Missouri, Kansas & Texas, who personally worked out a large part of the plans. Widmann & Walsh, St. Louis, were the architects, while Condron & Sinks, Chicago, designed the steel and reinforced concrete portions of the building. H. W. Lohman was manager, C. Dunlap, superintendent of erection of structural work, and Capt. Mills, superintendent of the general building work for James Stewart & Co. R. Beeuwkes was superintendent of installation for the Sprague Electric Works. We are specially indebted to Messrs. Fisher, Condron, Beeuwkes and Dunlap for the above information.

#### REPORT ON MARTIN'S CREEK DERAILMENT.

[Issued by the Board of Public Utility Commissioners of New Jersey, Robert Williams, President, June 13, 1911.]

On April 29, 1911, an accident occurred about eight-tenths of a mile south of Martins Creek Station, on the Belvidere Division of the Pennsylvania Railroad, resulting in the deaths of twelve and injuries to 101 persons.

Formal investigation of this accident was begun by the Board at a meeting held at Phillipsburg, May 10. Following the meeting at Phillipsburg a request was received from the Interstate Commerce Commission to be permitted to join the Board in the further investigation of the accident. This request was granted, and the investigation was resumed at a meeting held at Trenton, May 31, 1911, at which meeting Mr. E. L. Pugh, chief of the division of accidents, represented the Interstate Commerce Commission.

The derailed train was the second section of passenger train No. 573, and consisted of Pennsylvania engine No. 3169, Delaware, Lackawanna & Western combination car No. 706, Delaware, Lackawanna & Western coaches No. 84, 100 and 85, and Delaware, Lackawanna & Western dining car No. 458, in the order named. All of the cars were of wooden construction with vestibules and steel platforms. Coach No. 100 was lighted with acetylene gas, and dining car No. 458 was lighted with acetylene gas and equipped with axle-generator for electric light. The other cars were lighted with Pintsch gas. Train was en route from Utica, New York, to Washington, D. C., with 168 passengers and two tourist agents; it left Manunka Chunk at 2:40 P. M., and was derailed at about 2:56 P. M. The engineer, conductor and baggageman received injuries from which they soon died, and the fireman was seriously injured.

The derailment was immediately followed by fire, caused by

the ignition of gas, evidently from a puncture in the gas tank under the third coach (No. 100) as well as from the escaping gas from the gas tanks under the other cars, which had their connections broken, and permitted gas to escape. All cars were totally consumed by fire. The gas tank under the dining car exploded several hours after the wreck, which was caused by heat from the burning cars.

On the morning of April 29, acting under the instructions of the supervisor of the division, the section foreman, with a force of seventeen men, was engaged in throwing, realining and surfacing the curve . . . to the line stakes that had been set some months before.

The track at this point runs almost directly north and south, with about one-half of one per cent grade descending toward the south. The curve is about  $2\frac{1}{2}$  deg., and has a superelevation of about 5 in. for the east or outside rail.

The track is laid with 85-lb. standard steel rail, which has been in service nine years, and showed from one-eighth to one-quarter inch wear on curve north of point of derailment. There were from one to two bad ties in the track for each rail length, and tie plates were used on each rail. Track is ballasted with gravel and cinders.

The required work was to throw or shift the track from about two to nine inches, at different points, for a distance of about one thousand feet. The ballast was removed from the ends of the ties on the inside side of the curve, for the distance necessary to permit of the throw or shift of the track to the proper alinement. After throwing this track, by the use of bars and by easy stages of from one to two inches at a time, to the proper alinement, as indicated by the line stakes, the ends of the ties were tamped up with shovels. The section foreman then lined up and surfaced the inside rail, and had partially lined up and surfaced the outside rail.

The track, both north and south of, as well as at the point of derailment, had been thrown from two to nine inches on the day of the accident. Track jacks were used at different places on the curve in raising the track to proper level.

At the time of the accident the men were engaged in filling up the center of the track and tamping up under the ties with shovels at a point just immediately north of the place where the derailment occurred. The track gage was not used at any time in doing this work, but the level board was used for the purpose of arranging proper super-elevation and the necessary run-off leading to the same.

During the forenoon flagmen were used to protect this track in both directions, and after the noon hour a flagman was used to protect against trains from the north, until about 1 P. M., the time of the arrival of first 573, after which time no flagman was used. Three trains passed over this track between 1 P. M. and 2:56 P. M., the time second 573 was wrecked. No one of them, however, was running at the rate of speed of the wrecked train.

Eye witnesses of the accident say that the cars were derailed first. Some testified there was an explosion followed by the crash of derailment; others that the crash of derailment was immediately followed by an explosion; others say that the crash of derailment was all that they heard or saw. All agree as to the almost immediate presence of fire. Testimony as to the condition of the gas tank equipment disproves any theory of gas explosion, on account of the fact that the gas tank under car No. 100, the one supposed to have exploded, had been punctured by some outside agency.

Two committees of experts, selected by the Pennsylvania Railroad Company, made careful inquiry and investigation as to the cause of the accident, and agree as to it being a derailment of the forward truck of the tender, and agree, practically, as to where this truck left the rail. They disagree as to the cause of the derailment. One committee reported the derailment as evidently caused by a combination of uneven and irregular track, the high speed of the wrecked train while

passing over the track, and the probable failure of the section men to have proper superelevation on the curve, together with suitable run-off leading to the same, and sufficient ballast against ends of ties on high side of curve. The other committee reported that track condition was such as would warrant them expressing the opinion that it was not the cause of the derailment.

An outside expert, who was on the ground May 2 gathering data and making measurements as to the condition of the track, both at the point of the accident and at the curve just north of the accident, expresses the opinion that the cause of the derailment was the uneven and irregular condition of the track and the failure to have proper superelevation on the curve, and run-off leading to the same, causing the forward trucks [truck] of the tender to mount the rail, followed by the derailment of the other cars in the train.

The track being in loose condition, each train that passed over, prior to the accident, caused it to settle to such an extent that it became uneven and irregular and, in the opinion of Inspector McKelvey [of the New Jersey Commission], this caused the driving wheels of engine No. 3169 of second 573 to mount the outside rail, throwing the rails across the track, thus letting the entire train, with the exception of rear trucks of the dining car, off almost simultaneously. No one of the cars was telescoped.

The train, running at a speed of about 50 miles an hour, was thrown down an embankment on the east side and outside of the curve, the engine, tender and first car of the train turning over on their side, the remaining cars standing nearly upright.

in safety, at a speed of from fifty to sixty miles an hour, the rate at which this train was running.

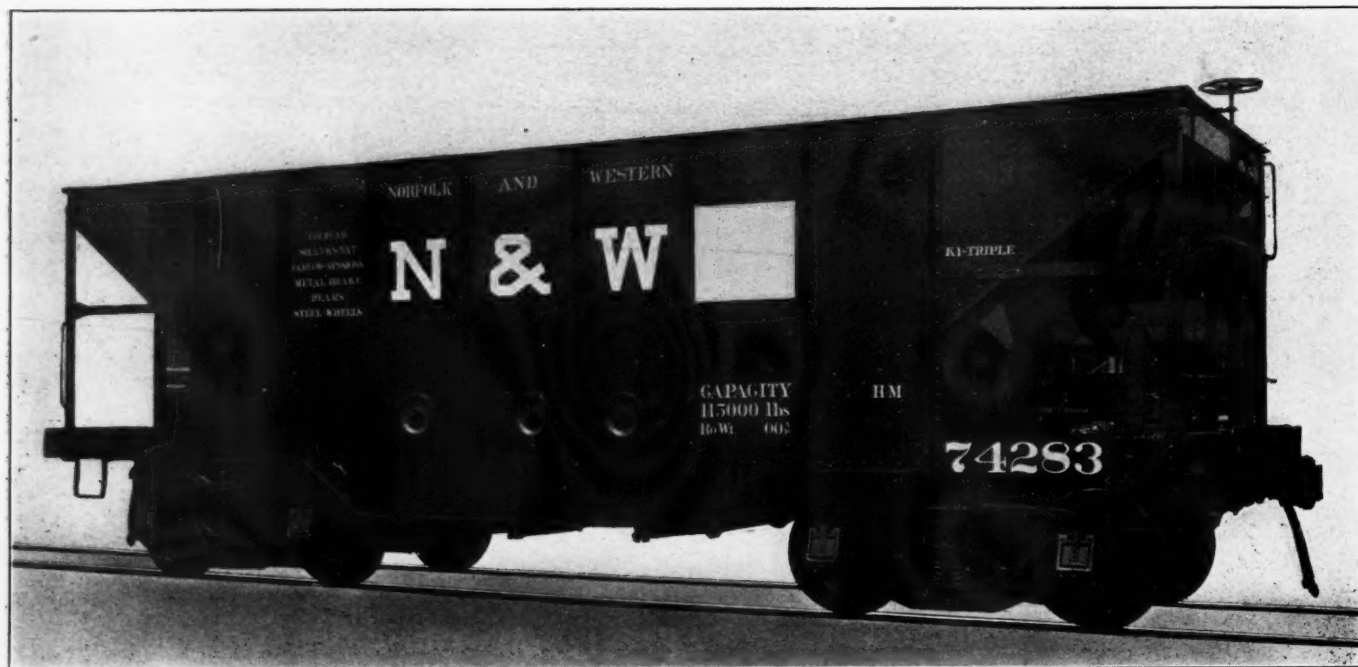
It is also concluded that this piece of track should have been protected by flag, until the work was completed; that is, until the elevation of the high rail had been carried around the curve and properly run off at the same point where the surfacing had been run off on the lower rail, and ballast replaced against the ends of the ties on the high side of the curve.

The rule, as interpreted by an official of the Pennsylvania Railroad Company, does not require flag protection in doing work of this character, and we believe such rule should be so amended as to leave no doubt as to the requirement of flag protection to all trains when the track is being shifted, realigned or thrown, or where such similar insecure conditions of track exist.

The facts that the cars in this train were of wooden construction, and that the lighting system used was gas, are evidently responsible for the great loss of life and the total destruction of the train by fire. Had the cars been of steel construction, or had electricity been used as the lighting system, it is certain the loss of life would not have been so great.

#### 57½-TON STEEL HOPPER COAL CAR; NORFOLK & WESTERN.

The Norfolk & Western is building 500 steel hopper coal cars with a capacity of 115,000 lbs. each, at its Roanoke shops, which contain some interesting features. The prevailing type of steel hopper car closely resembles that



57½-Ton Steel Hopper Coal Car; Norfolk & Western.

The evidence shows that no throwing or alining was done after first 573 passed, but work of surfacing, tamping and filling between the ties was being done continuously until the arrival of the second section.

The Board, under these conditions, concurs in the opinion of Inspector McKelvey that the section foreman erred in judgment in not having the track in proper condition for the safe passage of second 573, which was running at high speed. Under the circumstances he should have protected the same by a flag.

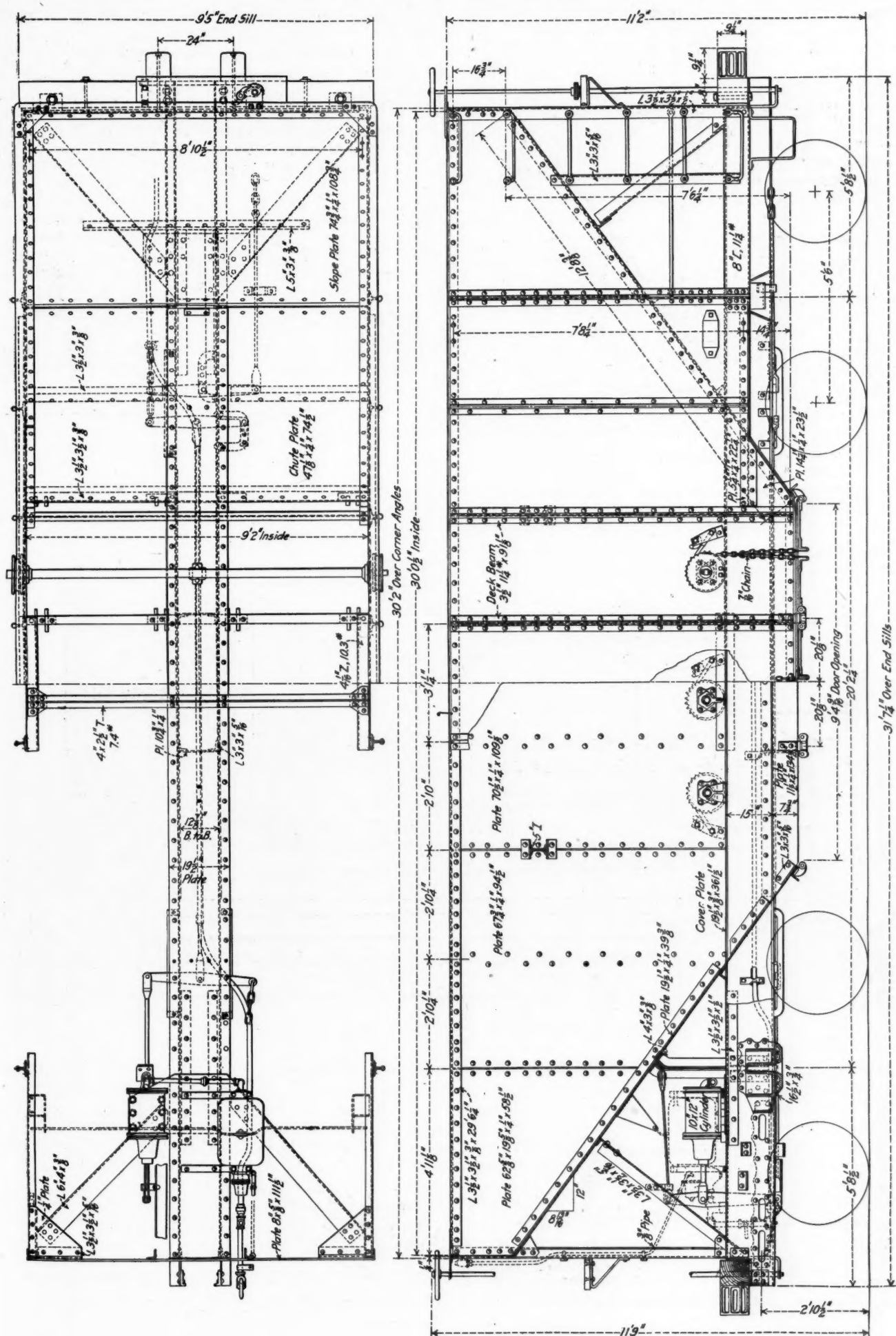
#### CONCLUSIONS.

It is the conclusion of the Board and of the Interstate Commerce Commission, from the evidence in this case, that the derailment was caused by an uneven, irregular and insecure condition of track, which would not permit a train to pass over it

originally designed by Charles T. Schoen of pressed steel shapes, in which the long inclined floor extended down below the sills and terminated in a swinging door, which was nearly at right angles to the inclined floor, when closed. This type required an incline between the hoppers that extended up into the space above the sills, thus taking room which should naturally be occupied with the lading.

The railways in the Virginia coal fields—the Norfolk & Western, the Chesapeake & Ohio, and the Virginian—have developed a type of hopper car with flat narrow doors operated by chains, in which the hopper extends down between the trucks, making that space useful for carrying coal. This makes it possible to obtain a capacity for 50 tons of coal without carrying the sides as high as the usual steel hopper car. The first cars









which extends the full length between the end sills. The end sills are 8 in. x 9¼ in. oak, backed by a 5⁄8-in. steel plate, and the couplers are protected by malleable iron buffer blocks. The steel sides and ends are ¼ in. thick, and extending across the car near the center are two 5-in. I beams, which act as lateral stiffeners to the high sides. On the outside the vertical stiffeners are 3½ in. deck beams spaced 34 in. on centers.

There are three pairs of flat hopper doors which are held in position by chains. The chain sheaves are rotated by shafts, and are held by ratchet pawls. The two chains from adjoining doors are wound on one sheave. The construction of this second lot of cars by the Norfolk and Western, with a capacity 7½ tons greater than the prevailing maximum, undoubtedly marks the beginning of a movement which will lead to the adoption of a 60-ton coal car as the new standard.

#### TRAIN ACCIDENTS IN MAY¹.

Following is a list of the most notable train accidents that occurred on railways of the United States in the month of May, 1911. This record is based on accounts published in local daily newspapers, except in the case of accidents of such magnitude that it seems proper to write to the railway manager for details or for confirmation.

##### Collisions.

Date.	Road.	Place.	Kind of Accident.	Kind of Train.	Kil'd.	Inj'd.
3.	N. Y., N. H. & H....	Scituate	xc.	P. & P.	0	9
6.	Midland Valley.....	Bokoshee	bc.	P. & F.	1	5
*14.	Central Vt. } .....	White R. Jcn.	bc.	F. & F.	4	3
	Boston & M. } .....					
21.	C., C., C. & St. L....	La Fayette	xc.	P. & F.	0	5
23.	M., St. Paul & S. S. M.	Gray's Lake	bc.	F. & F.	2	1
†29.	Chic. & B. Q.....	Indianola	bc.	P. & P.	12	20
29.	Southern .....	Knoxville	xc.	F. & F.	1	11

##### Derailments.

Date.	Road.	Place.	Cause of Derailment.	Kind of Train.	Kil'd.	Inj'd.
2.	Ches. & Ohio.....	Hinton.	unx.	P.	2	0
3.	South. Pac.....	Tacoma, Nev.	unx.	F.	1	1
5.	San Pedro L. A. & S. L.	Akin, Utah.	washout.	P.	1	0
6.	Stephenville, No. & So. Tex. ....	Hamilton.	unx.	F.	1	0
8.	Lehigh Valley.....	Elmira.	unx.	P.	..	20
10.	Lake E. & W.....	Erlin.	exc. speed.	F.	7	12
10.	Denver & R. G.....	Minturn.	unx.	P.	2	27
11.	C., St. P., M. & O.	Lyons.	unx.	P.	2	4
14.	Balt. & Ohio.....	Niles Junc.	unx.	P.	0	6
15.	Balt. & O. S. W....	E. Madison.	d. track.	F.	2	0
16.	St. Louis & S. F....	Garfield.	d. track.	P.	1	3
19.	Chas. & W. Car.....	Laurens.		F.	1	1
*23.	St. Louis & S. F....	McBride.	unx.	F.	1	2
24.	Boston & M.....	Brookside.	unx.	F.	0	3
28.	Seaboard A. L.....	Bostic, N. C.	bridge.	F.	4	2
30.	Chi. & N. W.....	Chelsea, Ia.	journal.	P.	..	5
30.	Chi., M. & P. S....	Malden.	unx.	P.	2	3

##### Other Accidents.

Date.	Road.	Place.	Cause of Accident.	Kind of Train.	Kil'd.	Inj'd.
14.	Southern Pac.....	Bryn Mawr.	boiler.	P.	1	1

The butting collision near White River Junction, Vt., early on the morning of the 14th was between a southbound freight of the Central Vermont and a northbound freight of the Boston & Maine, this part of the road being used jointly by those two companies. There was a "dense" fog at the time, and it is said that neither engineman had time to even apply the brakes before the collision occurred. The wreck took fire, caused it is said by the explosion of a brakeman's lantern, and fire engines were called from several towns around, but the fire was not cooled sufficiently to allow a search for the bodies of the victims until

about seven hours after the collision. The bodies of the four men killed were all blackened by the flames. One of them, it is believed, was not killed by the collision, but was burned to death; and the death of one of the firemen was due to scalding. The collision was due to an error on the part of the train despatcher in giving meeting orders to the trains. He discovered his error before the collision occurred, and attempts were made by telegraph and telephone to stop one of the trains, but these efforts failed. It is said that the agent at North Hartland opened his office that morning about two minutes too late; that two minutes earlier he could have received and executed an order to stop the northbound train.

The collision at Indianola, Neb., on the 29th, was between westbound passenger train No. 9 and eastbound passenger train No. 12, and the list of killed or fatally injured included, 4 engine-men, 1 express messenger, and 7 passengers. The collision is said to have been due to a misunderstanding of despatcher's orders.

The derailment at Aiken, Utah, in which the baggageman of the train was killed, was caused by the breaking of a dyke of an irrigation ditch.

The 7 persons killed at Erlin, Ohio, on the 10th, were members of a construction gang riding in a caboose, and the train consisted only of an engine and the caboose. It is said that the speed at the time of derailment was about 50 miles an hour, and the caboose was tossed about in very violent fashion.

In the derailment at Minturn, Col., on the 10th, a chair car and a sleeping-car fell into the Eagle river.

In the derailment at Bostic, N. C., on the 28th, both engine-men and both firemen of a double-head coal train were killed. The accident occurred in daylight, but it is said that the bridge, which was burning, was not seen by the runner of the leading engine in time to stop the train.

*Electric Car Accidents.*—Of the 21 accidents to electric cars reported in the newspapers as occurring in the United States in the month of May, four were charged with fatal results; one each at Oklahoma City; at Quincy, Ill.; at Tonawanda, N. Y., and near New Haven, Connecticut. There was one fatal injury in each case.

#### PRENTICE'S WIRELESS TRAIN CONTROL.

Frank W. Prentice, inventor of an automatic train stop and cab signal in which the apparatus on the engine is actuated from the roadway by Hertzian waves, without metallic contact, has been making extensive experiments on the Canadian Pacific, near Toronto, during the past year, and is about to hand his apparatus over to the railway company. As Mr. Prentice makes use of a number of instrumentalities not before tried in connection with railway signaling, we have procured from him drawings showing the arrangement of his electric circuits, and he has sent us notes descriptive of his apparatus and explaining his experiments, which form the substance of this article. Mr. Prentice began his experiments with his apparatus on an electric railway near Chicago several years ago, and these experiments have already been mentioned in these columns in connection with the annual reports of the Block Signal Board, which body examined the Chicago installation.

The experiments at Toronto have been made with a locomotive (No. 798) used in short distance freight service, and the stations or signaling points on the line equipped are as follows, going west from Toronto:

Queen street subway,  
Noble street,  
Lansdowne avenue,  
Golden avenue,  
Wallace avenue,  
Royce avenue.

The essential features of the track portion of this system are the track circuit and the generator of the wave. The generators include the transformer T, Fig. 3, the condenser C, and the discharge points PP, commonly known as oscillators. One of

¹Abbreviations and marks used in Accident List:  
bc, Rear collision—xc, Butting collision—xc, Other collisions—b, Broken—d, Defective—unf, Unforeseen obstruction—unx, Unexplained—derail, Open derailing switch—ms, Misplaced switch—acc, obst., Accidental obstruction—malice, Malicious obstruction of track, etc.—boiler, Explosion of locomotive on road—fire, Cars burned while running—P, or Pass., Passenger train—F, or Ft., Freight train (including empty engines, work trains, etc.)—Asterisk, Wreck wholly or partly destroyed by fire—Dagger, One or more passengers killed.

these generators is placed at the end of each block, and a wave wire is extended for a block length in the rear. This wave wire is No. 12 copper, and is laid in conduits on the ties in the center of the track, midway between the rails. The generator is controlled by the track circuit of the block in advance. A closed track circuit keeps the A. C. relays R closed, thus keeping the generator connected with the A. C. feed wires. The 110 volt current is stepped up in the ratio of 200 to 1, causing a static discharge to continuously take place between the oscillators, PP. The wave wire WW is connected to the oscillators, as is the pick-up wire, U. All the block sections are provided with

of two miles, generators (transformers) being located at Noble street, Lansdowne, Golden, Wallace and Royce avenues. These have been in constant service since March 25, 1910, without interruption. The expense for current for this period has been two cents per days per block. There being no batteries in the track installation, the cost of maintenance is low.

Having a wire which extends throughout a block and being charged with a wave-producing current, which makes the wire the center of a series of outwardly extending impulses, and having a constant radius of influence at any point along the wire, it remains only to run a train-carried antenna, with its

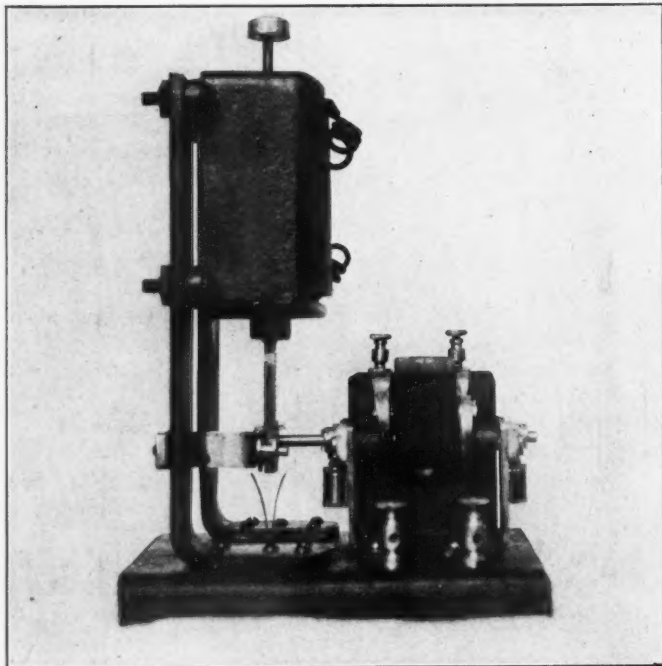


Fig. 1—Coherer and Solenoid; Coherer in Operating Position.

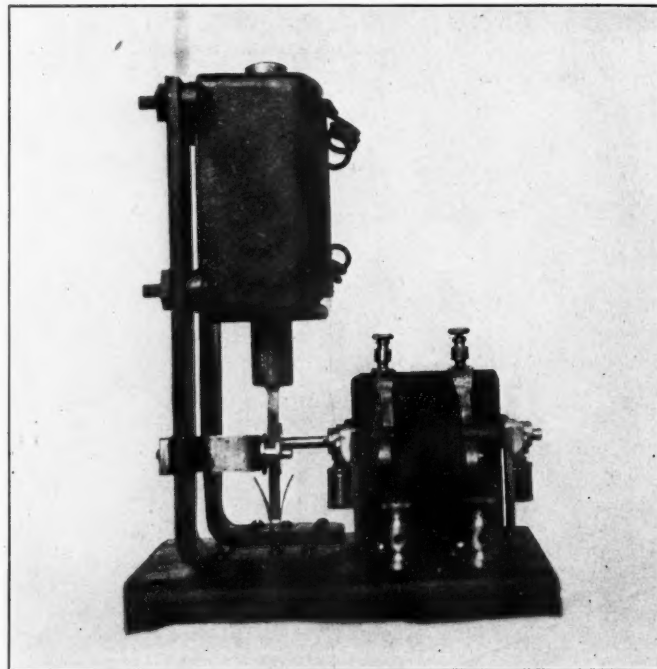


Fig. 2—Coherer and Solenoid; Solenoid De-energized and Rack in Lower Position.

the ordinary form of vane type relays and A. C. track circuits. The wires WW and U are charged with the wave producing current only when the block in advance is clear. The wave wire WW is insulated from the track, and its preferred position with reference to the track is along the middle of the ties as shown. The maximum length of the wire which can be charged with one oscillator is measured by miles, so that the length of the blocks is governed by the requirements of traffic and economical operation of track circuits.

The track installation on the Canadian Pacific consists of eight blocks from 2,000 ft. to 4,500 ft. each in length, four blocks on the westbound and four on the eastbound track, beginning at Queen street subway and ending at Royce avenue, a distance

coherer, into the block, and at the instant this antenna enters the zone of the wave, the coherer is caused to become a conductor of electricity. Intangible, mysterious though the wave may be, nevertheless it furnishes a positive connection between train and track. More than this, its field of influence can be definitely confined; the radius of the zone can be limited to one, or two, or five feet if desired, as easily as to a mile. This is accomplished in the generating apparatus.

The part of the system which is carried on the engine comprises first, the main antenna, 19 ft. long, suspended from the boiler braces by three hangers, the antenna consisting of aluminum plate four inches wide, and hanging directly over the

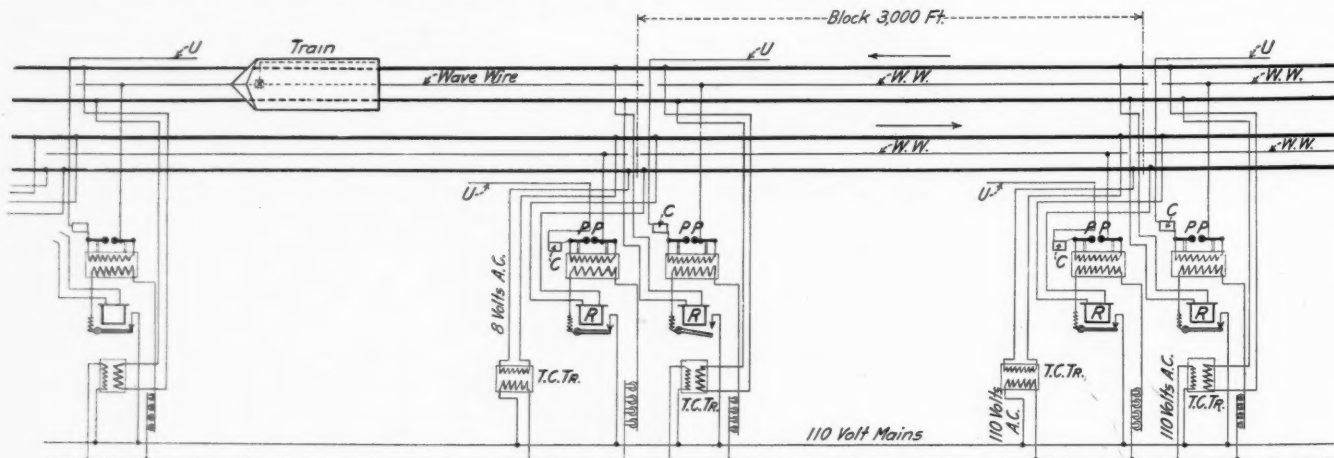


Fig. 3—Electric Circuits on Track and Roadside.



wave wire,  $1\frac{1}{2}$  in. above the level of the pilot, or  $6\frac{1}{2}$  in. from the conduit. Second, a pick-up antenna suspended in a like manner on the right hand side, beneath the cylinder cocks, 13 in. outside of the rail and directly over the pick-up wave wire which is fixed at the end of each block. Third, a Pyle turbine generator giving 6 volts and 20 amperes of current for supplying the current to the wave responsive apparatus. Fourth, the train-control mechanism, the main feature of which is the coherer, Figs. 1 and 2, consisting of a wood fiber receptacle having a hole in the center and two lugs inserted in its bottom  $\frac{1}{4}$  in. apart

them; that is, they complete the circuit of the master relay, 15. Once these filings have cohered they will retain such cohesion until they are jarred by the rotating apparatus, as described.

The coherer is thus kept in operation constantly while an engine is in service. By this means the relay opens and closes every three seconds during the time the wave is being received.

Connected to the master relay is a series of 10 hold relays, 3 to 12 inclusive. These relays will hold their magnetism one second each after the current is broken, and as they are in parallel series, relay 12 releases its contact 10 seconds after the master

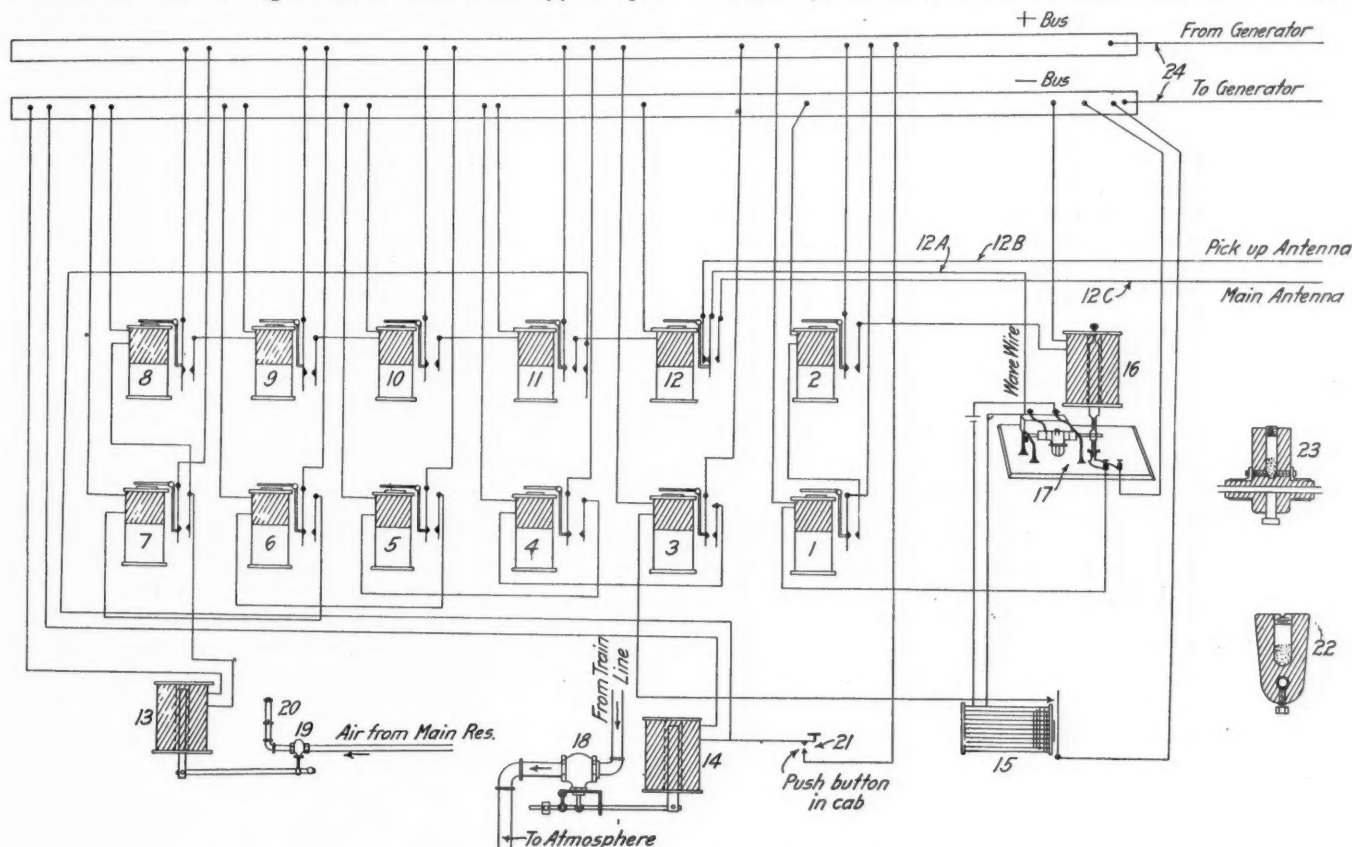


Fig. 4—Electric Circuits on Locomotive.

(22 and 23, Fig. 4). Within the coherer are the wave responsive filings, sufficient to fill in the aperture between the lugs. The coherer is rotated regularly on an axle through 90 deg. of a circle, and back again, by a solenoid working a rack and pinion. This apparatus, energized by a current from the turbine generator, by overturning the coherer destroys it, as a conductor of current, every three seconds. Fig. 1 shows the rack in its upper position. The solenoid having lifted it to this position, the solenoid circuit is automatically opened, but the current continues for two seconds because the relays which open the circuit are slow-releasing, the relays successively holding the circuit

relay ceases to be energized by the current flowing through the coherer.

Relay No. 7, through its armature contact points, energizes solenoid 13, whose plunger holds closed, through a fulcrumed lever, valve 19, which prevents the air (from the main air brake reservoir) from blowing the whistle (20).

Relay No. 11, through its contact, energizes solenoid 14, which through its fulcrumed lever holds closed balanced valve 18, preventing the escape of air from the train line through a one-inch port.

Relay No. 12 has a front and a back contact, and a common

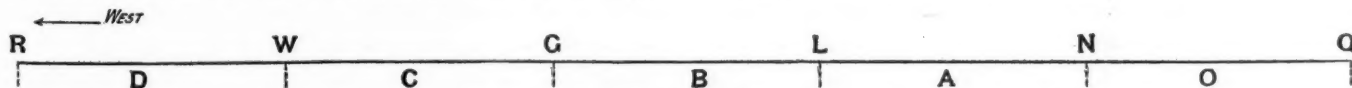


Fig. 5—Sequence of Block Sections; Queen st., Noble ave., Lansdown ave., Golden ave., Wallace ave., Royce ave.

closed one second each. In this position the filings rest between the two lugs. At the end of the two seconds the rack drops to the position shown in Fig 2, allowing the filings to drop out of their position by gravity. This de-coheres them, opening the main circuit. As soon as the rack reaches its extreme lower position it again closes the circuit which energizes the solenoid and the coherer is again revolved into its working position.

Normally the filings are a non-conductor of current, but when a Hertzian wave passes through their zone the resistance on their outer surface is broken down and a current flows through

wire, 12a, connecting with coherer 17. When relay 12 is closed its common is in connection with the main wave wire antenna under the engine; and when the relay is de-energized this common wire is in connection with the pick-up antenna suspended under the steam chest.

Solenoid 14 also may be energized by pressing a push button, 21, in the cab of the engine within the reach of the engineer.

Engine 798, leaving the roundhouse at Toronto on its trip to West Toronto, has its solenoid, 16, energized and coherer, 17, in operation. There being no wave wire for some distance (to

Parkdale) the master relay 15, the hold relays 3 to 12 and the solenoids 13 and 14, are de-energized; the whistle (20) is blowing and the train line valve 18 is held closed by push button 21 to keep the brakes released. The engine enters the wave zone just west of Queen street subway, and if the first block is unoccupied the pick-up wave wire is energized and the wave jumps from it to the pick-up antenna, the wave reaching the coherer through its contact on relay 12 (wire 12a), closing the master relay 15, which closes relays 3 to 12. By the closing of relay 12 the coherer is connected with the main antenna under the engine; solenoid 13, energized by the closing of relay 7, stops the whistle from blowing; solenoid 14 likewise closes valve 18 and the engineman can then remove his finger from push button 21. The engine is now under control of the wave, and as long as the wave is being received master relay 15 will be opened and closed every three seconds,  $2\frac{1}{2}$  seconds closed and  $\frac{1}{2}$  second open. That is to say, the wave is constant, but its influence is made intermittent by the regular destruction of the receiving apparatus by the overturning of the receptacle containing the filings. But the destroying process, at its completion at the end of  $2\frac{1}{2}$  seconds, becomes a restoring process—closes a circuit to again energize solenoid 16 (through the contact points of relays 1 and 2), which again puts the filings in working position; and relay 15 is thus again energized before the opening of the successive relays (3 to 12) has proceeded far enough to disconnect the coherer from the main antenna 12c at relay 12, or even far enough to blow the whistle. Consequently relay 3 and its trailing relays 4 to 12 will remain closed. The wave is being received from the generator at Lansdowne avenue, the generator in turn being controlled by the A. C. track circuits being fed from Golden avenue block station.

If there is a train in the block between Golden avenue and Wallace avenue, the wheels of the train shunt the current of the track circuit, and de-energize the relays at Golden avenue, making dead the wave wire in the block in the rear. The coherer then receives no wave and the master relay remains open; in one second relay 3 opens and relays 4, 5, 6 and 7 open successively, each one second later; so that in five seconds after entering the block at Lansdowne avenue, solenoid 13 drops its valve 19, and the whistle starts blowing; 4 seconds later relay 11 opens, de-energizing solenoid 14, and the train line valve is opened; so that 10 seconds after entering the block at Lansdowne avenue the brakes are being applied.

Relay No. 12 has opened and the coherer is now connected with the pick-up antenna under the steam chest by wire 12b; and the coherer cannot again operate until the engine reaches a pick-up wire. That is to say, the giving of a clear signal on the engine by means of the coherer, can be effected but once in each approach section. The pick-up antenna is 3 ft. 5 in. from the main wave wire, which lies in the center of the track. The engine is brought to a stop unless the engineman, when the whistle starts to blow, closes push button 21, holding solenoid 14 closed, thus preventing the application of the brakes. If the engineman is incapacitated or dead it is obvious that the train will be brought to a stop. Suppose that before the engine reaches G (see Fig. 5) Block C has cleared; then when it comes to the point where it is over the pick-up wire at G, it is again placed under control of the wave. But suppose that Block C is still occupied; the pick-up wire at G is not energized and the engine enters the block with its coherer still connected with the outside antenna, and as the waves from the main wave wire will not jump more than 12 in., the apparatus on the engine is irresponsible, and the train runs into and through Block C under the whistle signal of caution.

The hold relays are immersed in oil in a metal box, and the oil will remain liquid at 50 deg. below zero.

The equipment on the engine has been run continuously for 104 hours. This engine usually is in service from 6 a. m. Monday until 8 p. m. Sunday, hauling from 20 to 60 cars a trip. Stops are made daily by the wireless apparatus with wide open throttle.

The reduction of pressure required to stop a train depends on the speed of the train and number of cars. A reduction of about 25 lbs. in the train line is required to stop a light engine running at 60 miles an hour, and a reduction of from 8 to 10 lbs. is required to stop a train of 40 cars running at 35 miles an hour.

All track devices and all train devices are arranged on the closed circuit principle. The train air brake pipe is kept closed by a balanced valve, and when the wave ceases it drops open by gravity. It is not pulled open, and the only chance of its failure, says Mr. Prentice, is when the apple fails to fall from the tree to the ground; and when that occurs we shall none of us have any occasion for train control.

The coherer, always working, is the watchman of the apparatus. It delivers a report every two seconds to the master relay that all is well; and when all is not well it ceases reporting. The coherer is perpetually being drawn up to keep it in perfect condition for the wave influence, which it received by the engine-carried antenna. The whistle valve and the train line valve are being forcibly held closed by the presence of the wave, and are dropped by gravity and opened in case of its cessation. A failure anywhere means a stop, except the engineman is in possession of his senses and faculties and uses the push button to keep the train line closed; but even then the air whistle keeps blowing and is a constant reminder of the necessity for caution and danger ahead.

A train entering a block when the next block is occupied is brought to a stop unless the engineman intervenes. After this the train may proceed under a caution signal. The caution signal forces attention either until a clear block is reached, or until the mechanism on the engine has renewed operations because of the wave on the unlock wire at the side of the track.

The wave may be confined to a definite zone, and its ability to affect the coherer is in no way affected by the presence of foreign currents of electricity or the presence of masses of metal. On the line between West Toronto and Parkdale the tracks run parallel to and cross the line of the Ontario Development Company's and the Hydro-Electric Company's high tension wires of 110,000 volts; two metal bridges are crossed over and one is passed under.

The device has taken its present form as the result of a process of elimination by its designers of less suitable forms. The present installation of the system has now been working for the last six months experimentally, and Mr. Prentice says that the results on the engine and beside the track with the Hertzian wave are absolutely satisfactory in every respect.

#### FOREIGN RAILWAY NOTES.

A new railway is projected to fill a gap between Stadskanaal, Holland, in the province of Drenthe, and the German frontier at Ter Apel, about 10 miles.

To provide an outlet for the products of the Zoutpansberg district in the Transvaal, about 360 miles of new railway construction is proposed by the government. This new line will serve what will probably prove the largest cotton belt in the Transvaal, while the distance by railway to the coast will be reduced by about 200 miles.

Last January a passenger going from Paris to Havre found that there was no heat in his car. He complained of this at a station where the train stopped, but nothing was done, and the train went on as cold as ever. In his rage he pulled the safety signal cord, which passengers are forbidden to touch unless there is imminent danger. When the guard came he had the passenger taken before the court for his outrageous conduct in stopping the train. But the court found that the passenger was justified, since he was in imminent danger of freezing, and it let the passenger go free. This was on a state railway.



## General News Section.

The general offices of the Evansville & Terre Haute will be removed from Evansville, Ind., to Chicago on August 1.

The marine repair shops of the New York Central at West New York, N. J., were destroyed by fire on Sunday last.

The roundhouse of the Atchison, Topeka & Santa Fe at Seligman, Ariz., was destroyed by fire on June 11, and nine locomotives in the house were badly damaged.

The southbound limited express of the Southern Pacific was stopped by highwaymen near Drain, Ore., last Saturday night about 11 o'clock, and the mail car was robbed.

Officers of the Pennsylvania say that the strike of shop men on the Pittsburgh division of the road has been subdued. Four hundred strikers returned to work on Tuesday.

A searchlight of great power, and which will be lighted every evening from 8 to 10 o'clock, has been installed on the top of the new passenger terminal of the Chicago & North Western at Chicago.

Official figures given out by the Indiana state board of tax commissioners show the total appraisal of steam railways in the state to be \$203,919,419, an increase of \$6,978,044 over the figure for last year.

The Southern Pacific, which recently sent a train load of its conductors to the eastern states, has just started its third "educational" trip of that kind, carrying division superintendents and subordinate officers. This trip is to consume four weeks.

In the federal court at Albuquerque, N. M., the government has filed a suit against the Atchison, Topeka & Santa Fe for violation of the hours of labor law, charging thirty-five offenses during the month of December last between Albuquerque and Belen.

The Baldwin Locomotive Works are running; and officers of the company say that there is no trouble. Reporters have difficulty in securing accurate information. Large numbers of strikers held a mass meeting on Monday last, but it does not appear that any action was taken.

The suburban trains of the Southern Pacific which make their terminus at Alameda, Cal., across the bay from San Francisco, are now propelled by electric power, and it is expected that suburban trains running to the adjacent pier at Oakland will also have electric motors next week.

Edgar S. Cooke, who has been on trial at Cincinnati on a charge of embezzling \$24,000 from the Cleveland, Cincinnati, Chicago & St. Louis Railway, has been declared not guilty. Cooke was tried in connection with charges under which Charles L. Warriner, convicted last year, was sentenced to six years imprisonment.

The Mississippi Valley, South America & Orient Steamship Company, which has filed its charter at New Orleans, La., with \$3,000,000 capital stock, of which \$100,000 has been paid in, proposes to operate lines from New Orleans to the west coast of South America and to the Orient on the completion of the Panama canal.

The Great Northern has filed suit in the United States Circuit Court at Seattle, Wash., asking for a restraining order to prevent the enforcement of the state full crew bill, the contention being that two brakemen and a flagman on a full train and a flagman on a light engine are unnecessary and would cause an annual expense of \$60,000 without corresponding benefit.

C. W. Wilson, an employee of the International & Great Northern, who entered suit against the road for \$30,000 for the loss of his eyesight, alleged to have been caused by a piece of metal which flew loose from a pick with which he was working on the company's roadbed several months ago, has been awarded \$20,396.05 damages by a jury in the Thirty-seventh District Court of Texas.

The authorities of the city of New York, on application of the New York Central, have extended to December 31, 1912,

the time within which the improvements at the Grand Central Terminal must be completed. The rule adopted has, however, a proviso that certain bridges must be completed by April 1, 1912, namely: the bridges carrying Forty-sixth, Forty-seventh, Forty-eighth, Forty-ninth, Fifty-second and Fifty-third streets across the railway yard. Bridges at some of the other streets and across the yard are already passable.

The Transcontinental Passenger Association held its annual meeting at Salt Lake City on June 14, this being the first time it has been held outside of Chicago. Questions concerning making special rates for meetings of various clubs and organizations to be held throughout the country during the summer and fall, stop-over privileges, free transportation for clergymen, baggage regulations, etc., were discussed and referred to special committees. On June 15 members of the association and friends were the guests of the Oregon Short Line on a trip to Yellowstone Park.

Postmaster-general Hitchcock, who is investigating the subject of railway mail pay, says that the work has progressed far enough to enable him to say that many railways are making large profits on mail carriage, while others are doing the work at a loss. Of 394 companies which he has investigated, 278 are making a profit and 116 are losing. The rate of profit or loss varies widely with different companies. He proposes to make up a schedule under which each carrier will make a profit of 6 per cent. on carrying the mails; and expects that with such a schedule he will save to the government \$9,000,000 a year.

The merging, on July 1, of the Washington County Railway, the Somerset Railway and the Seaboard & Moosehead with the Maine Central, will enlarge two divisions of the M. C.; the Washington County Railway becomes a part of the Eastern division, and the Somerset and the Seaboard & Moosehead become parts of the Portland division. At the same time the Rangeley division becomes a part of the Portland division of the Maine Central. The terminal division of the M. C. will hereafter be a part of the Portland Terminal Company, which embraces the Union Station and some territory of the Boston & Maine.

A complaint has been filed by the Southern Pacific Company in the United States Circuit Court at Salt Lake City, Utah, asking that six ticket scalpers named in the complaint be brought to court and made to answer to charges of violations of the Interstate Commerce law forbidding scalping. Since Salt Lake City and other Utah points have become famous as health resorts, thousands of tourists take advantage every year of the reduced rates to that portion of the country, affording scalpers a big business in unused portions of tickets; and the roads are taking steps to make it impossible to secure tickets in any way other than through the regular channels.

At a meeting of the officers of the National Association of Railway Commissioners, held in Chicago on June 17, Chairman C. F. Staples, a member of the Minnesota railway commission, was directed to appoint a sub-committee to study the matter of investigating express companies, their profits and the rates charged by them. This committee will probably make a report at the annual convention of the National Association which will be held at Washington, D. C., next October, with a view to making express rates throughout the different states uniform, fair and reasonable. Representatives of the railway commissions of Minnesota, Illinois, New York, Oklahoma, Ohio, Indiana, Kansas, Kentucky, Missouri, North Dakota, Michigan, Florida and Massachusetts, were present at the Chicago meeting.

The Chicago, Burlington & Quincy, in a letter signed by President Darius Miller, has asked more than 44,000 of its employees to join in an effort toward increasing the efficiency and reducing the expenses of operation of the road, and solicits suggestions for improvements in the service, for greater economy and greater safety. Mr. Miller says of the plan to economize: "It would overcome many of the disadvantages with which the company is now confronted in the way of increased cost of material and increased pay roll and without perceptible effort would also greatly increase the efficiency and value in the company's serv-

ice of every employee on the pay roll. In this way the company would have the assistance and support of every employee in adjusting its affairs to the decreased earnings which are now resulting from the large shrinkage in the volume of business prevailing at the present time."

Under the reorganization of the Missouri Pacific and the St. Louis, Iron Mountain & Southern (see item under Operating Officers in the Elections and Appointments column of this issue), the general manager will have charge of transportation and the maintenance of way and equipment. The general superintendent will have charge of the divisions in his district, and is to be assisted by an engineer of maintenance and an assistant superintendent of machinery, as outlined in the item referred to; and the superintendents will have charge of the transportation and maintenance of their divisions and supervision over the trainmasters, chief dispatchers, master mechanics and the division engineer in charge of roadmasters, supervisors and assistant engineers. The chief engineer will have charge of construction and maintenance of way, reporting to the first vice-president on construction and to the general manager on maintenance. He will assume the duties of the engineer of construction, and of the chief engineer maintenance of way, and will handle items of improvement and maintenance exceeding the capacity of the superintendent's forces and equipment. The superintendent of machinery will have charge of the construction and maintenance of equipment and the direct supervision of shops and yards for general repairs of importance requiring a shop superintendent.

The New York, New Haven & Hartford has sent to every member of the Massachusetts legislature a circular protesting against the proposed law to require the electrification of railways in and near Boston. It says: "Except where use of tunnels is rendered less dangerous by use of electricity, there has been no compulsory electrification of railways. All the electrification of the New Haven has been without compulsory legislation. The New Haven has repeatedly stated its desire and willingness to electrify. This year it proposes to electrify from Boston to Readville, 9 miles, and from Boston to Beverly, 19 miles, on the Boston & Maine.

"Electrification of short distances, say 10 miles, has never been found at all economical, and a compulsory electrification within a 10-mile limit will be unusually uneconomical. Money required for electrification must be raised by the issue of new securities. . . . It is proposed to discriminate against every other city and town of the state in favor of the district within 10 miles of Boston. It is estimated that the cost of electrification in this district will amount to approximately \$40,000,000. If the railways are called upon to make this expenditure and the proceeds of the securities which the public may be willing to purchase must be expended in this electrification, then other railway improvements must necessarily wait, because there is a limit to the amount of money which the public will invest in railway securities."

#### Professor Adams on Efficiency.

Henry C. Adams, who resigned his place with the Interstate Commerce Commission, has taken a commission as special investigator for the New York Central, and will advise President Brown on matters of "efficiency." As quoted in the *Wall Street Journal*, Professor Adams says:

"I believe the railway is a public servant. The railways are eager to answer for themselves the questions which Mr. Brandeis raised in the rate cases. There has come up recently a new generation of railway presidents, Willard of the Baltimore & Ohio, Brown of the New York Central, and Ripley of the Atchafalaya. These men have the business idea of railroading. They know perfectly well that the financial stability of the Harriman lines was brought about by the work done in the office of Julius Kruttschnitt.

"Realizing that public control is going to be more and more enforced, the railways want to be in a position, with reference to a knowledge of themselves, from which they can reveal the defects of any proposed regulation based on injustice or unreasonableness. The railways know that they are going to be subjected to an even greater measure of public control than they now experience, and they want to insure the reasonableness of that control.

"The railway is a public servant; but no servant serves whose services are not wanted. To my mind a reasonable rate is one that insures a fair return to the poorest railway that the public needs. The public is a partner in the railway business, and is entitled to just as definite a share in the railway's earnings as a stockholder. When a railway finds itself at the end of the fiscal year in a position to pay interest, declares a dividend, and still has money on its hands, to whom does that money belong? I say it belongs to the public. No definite percentage, such as 6 per cent. or 7 per cent., can be stated at this time as a reasonable return for a railway. For one railway a profit of 6 per cent. would be large; for another, small. There is no typical railway, any more than there is a typical man."

#### Railway Farming.

Worn out land will yield a profit if it is treated wisely. The Pennsylvania Railroad has been proving it at Bacon, Delaware. The company bought land which had not been farmed for over five years. It had been robbed of its fertility several years earlier and, considering it worthless, its owners let it grow up in sassafras, sweet briar and weeds. It was in this condition when the company's expert took charge. By a small application of stable manure, about 15 tons per acre, and 500 pounds of lime, corn was raised at the rate of 47 bushels an acre the first year.

A large variety of fruits and vegetables was grown and nearly everything planted added something to the farm's income. The best money-makers were lima beans, yielding a net profit of \$147.61 to the acre. Cucumbers yielded \$104, watermelons \$52, muskmelons \$42, radishes \$42.70, leeks \$41, onions \$40.37, and sweet potatoes \$40.50 per acre. All this during the first year. Much better results are assured as the land is strengthened.

Besides offering to farmers these practical examples, demonstrations of up-to-date farming methods have been given. One of these, which consisted of draining a swamp and blowing out stumps with dynamite, was attended by over 500 people from the surrounding country. Following is a sample record at Bacon:

#### LIMA BEANS.

Seed, per acre.....	\$10.00	Lima beans sold, per acre..	\$250.00
Labor, per acre.....	36.23		
Fertilizer, per acre.....	34.00		
Freight and commission....	22.16	Total expense, per acre..	102.39
Total expense .....	\$102.39	Profit, per acre.....	\$147.61

#### Society for the Promotion of Engineering Education.

The Society for the Promotion of Engineering Education will meet at Pittsburgh, June 27-28-29. The meetings of Tuesday and Wednesday will be at the School of Applied Sciences of the Carnegie Technical Schools; and the meeting of Thursday at Thaw Hall, University of Pittsburgh. The executive session and election of officers will be held on Wednesday evening at the School of Applied Industries of the Carnegie Technical Schools. On Tuesday afternoon there will be a visit to the Country Club, and in the evening there will be a dinner; and President A. N. Talbot will deliver his annual address. On Wednesday and Thursday afternoons there will be excursions to industrial plants, and on Thursday evening a reception at the Carnegie Music Hall. Excursions to industrial plants will be arranged also for Friday and Saturday. The chairman of the local committee is J. H. Leete.

#### MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Scranton, Pa.
- AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—C. M. Burt, Boston, Mass.; next meeting, St. Paul, Minn., Sept. 19, 1911.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, East St. Louis, Ill.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—O. G. Fetter, Carew building, Cincinnati, Ohio; 3d Friday of March and September.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—H. C. Donecker, 29 W. 39th St., New York; October 9-13, Atlantic City, N. J.
- AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 24 Park Place, New York.



AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago; Oct. 17-19, 1911, St. Louis, Mo.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, Monadnock Block, Chicago.

AMERICAN RAILWAY INDUSTRIAL ASSOCIATION.—G. L. Stewart, St. L. S. W. Ry., St. Louis, Mo.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—O. T. Harfoun, Bloomington, Ill.; annual convention, July 11-13, Chicago.

AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.; June 27-July 1, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., New York; 1st and 3d Wed., except June and August, New York.

AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—D. J. Haner, 13 Park Row, New York; 3d Tuesday of each month, New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.

ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—C. G. Phillips, 143 Dearborn St., Chicago.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—J. R. McSherry, C. & E. I., Chicago.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, 135 Adams St., Chicago; June 26, 1911, Boston, Mass.

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 24 Park Pl., New York.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 1st Tuesday in month, except June, July and Aug., Montreal.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 413 Dorchester St., Montreal, Que.; Thursdays, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month, Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Thurs. in Jan. and 2d Fri. in March, May, Sept., Nov., Buffalo, N. Y.

CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—D. F. Jurgensen, 116 Winter St., St. Paul, Minn.; 2d Monday, except June, July and Aug., St. Paul.

ENGINEERS' SOCIETY OF PENNSYLVANIA.—E. R. Dasher, Box 704, Harrisburg, Pa.; 1st Monday after 2d Saturday, Harrisburg, Pa.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—E. K. Hiles, 803 Fulton building, Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.

FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Richmond, Va.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—E. S. Koller, 226 W. Adams St., Chicago; Wed. preceding 3d Thurs., Chicago.

INTERNATIONAL MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.

INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, rue de Louvain, 11 Brussels; 1915, Berlin.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—L. H. Bryan, D. & I. R. Ry., Two Harbors, Minn.; July 25-27, Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, Lima, Ohio; annual, Aug. 15, Toledo, Ohio.

IOWA RAILWAY CLUB.—W. B. Harrison, Union Station, Des Moines, Ia.; 2d Friday in month, except July and August, Des Moines.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION, OF UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass.; Sept. 12-15, 1911, Atlantic City, N. J.

NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.

NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.

NORTHERN RAILWAY CLUB.—C. L. Kennedy, C., M. & St. P., Duluth, Minn.; 4th Saturday, Duluth.

OMAHA RAILWAY CLUB.—H. H. Maulick, Barker Block, Omaha, Neb.; second Wednesday.

RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.

RAILWAY CLUB OF PITTSBURGH.—C. W. Alleman, P. & L. E., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Bethlehem, Pa.; June 13, New York; annual, Oct. 10, Colorado Springs, Colo.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, Box C, Collinwood, Ohio.

RICHMOND RAILROAD CLUB.—F. O. Robinson, Richmond, Va.; 2d Monday, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Walter E. Emery, P. & P. U. Ry., Peoria, Ill.; September 12-15, St. Louis, Mo.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—C. Nyquist, La Salle St. Station, Chicago; Sept. 12-14, St. Paul, Minn.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Montgomery, Ala.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., Atlanta.

TOLEDO TRANSPORTATION CLUB.—J. G. Macomber, Woolson Spice Co., Toledo, Ohio; 1st Saturday, Toledo.

TRAFFIC CLUB OF CHICAGO.—Guy S. McCabe, La Salle Hotel, Chicago; meetings monthly, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August, New York.

TRAFFIC CLUB OF PITTSBURGH.—T. J. Walters, Oliver building, Pittsburgh, Pa.; meetings monthly, Pittsburgh.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7042 Stewart Ave., Chicago; annual.

TRANSPORTATION CLUB OF BUFFALO.—J. M. Sells, Buffalo; first Saturday after first Wednesday.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, L. S. & M. S., Detroit, Mich.; meetings monthly.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.; annual, August 29-September 1, Chicago.

WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, Old Colony building, Chicago; 3d Tuesday of each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago; 1st Wednesday in month except July and August, Chicago.

WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, First National Bank bldg., Chicago.

## Traffic News.

L. D. Rosenheimer has been appointed traffic manager of the International Forwarding Company, with office at Chicago.

The Chicago & North Western has put on, to run from Chicago to Omaha, a new "daylight" train, which will leave Chicago daily at 8:30 a. m., reach Cedar Rapids, Iowa, at 2:26 p. m., and arrive in Omaha at 10:40 p. m.

The latest educational train on the Southern Railway is the "road improvement train," which is making a tour of eastern Tennessee, beginning June 26, and extending to and including July 8. This train is run in conjunction with the United States Office of Public Roads.

Beginning July 1 the New York Central, in connection with the Louisville & Nashville, will have a more direct line from Chicago to the gulf of Mexico, the route being via the Chicago, Indiana & Southern and the Big Four to Mt. Carmel, Ill., and from thence by a branch of the Big Four, which will begin operations on that date, to Evansville, Ind., where connection is made with the Louisville & Nashville.

The Everett line of the Chicago, Milwaukee & Puget Sound has been opened for freight traffic, and shipments can now be handled to and from the following points in Washington: Tanner, North Bend, Snoqualmie, Falls City, Tolt, Stillwater, Duvall, Monroe and Snohomish. Through rates have been established between these points and stations on the C. M. & P. S., and connecting lines.

The industrial department of the Southern Railway announces the appointment of Dr. C. M. Morgan as dairy agent for that company. Dr. Morgan is a graduate of the Ohio State Agricultural College, and has served several years in the United States Department of Agriculture. Since last September he has been special agent of that department in South Carolina and Georgia, devoting his efforts to the development of live stock.

The Chicago Great Western has restored the faster freight train schedules between Chicago and Kansas City, Omaha, Milwaukee, St. Paul, Minneapolis, Duluth and other western cities, which were superseded last March on that and a number of other Chicago roads by slower schedules, providing for delivery on the third instead of the second morning from Chicago. It is believed that the other roads which made the changes will also restore their former schedules.

Tariffs filed by the Oregon-Washington Railroad & Navigation Company and the Southern Pacific Company provide for the absorption by those companies at Portland, Ore., after July 20 of the \$5 switching rate, which it has been their practice to charge for transferring cars of freight from the east which arrive over the Harriman lines to the premises of shippers located on the lines of the Oregon Electric and the United Railways.

The Maine Steamship Company announces that, beginning tomorrow, it will run steamers from New York to Boston daily, leaving New York at 4 p. m., and reaching Boston about 8:30 the next morning, with a corresponding service in the opposite direction. The fare is \$4, and the price of staterooms ranges from \$1 to \$8. It will be observed that the time named in this announcement is somewhat slower than that which was made by the Yale and Harvard last year. The vessels of the new line are described as the "luxurious new steel passenger steamships" Massachusetts and Bunker Hill.

The Wabash has made the announcement to shippers that beginning June 18 its freight schedule between Chicago and St. Louis will be lengthened, and it is probable that the Alton, the Illinois Central and the Chicago & Eastern Illinois will follow the lead of the Wabash, it having been concluded that the fast freight service between those points yielded too narrow a margin of profit to the roads. Under the new arrangement shippers at Chicago will have until 6 o'clock in the evening to get their freight to the depots, it having been necessary under the shorter schedule for the freight to be at the depot at 3:30 p. m. Second morning delivery only will be guaranteed instead of first morning delivery, as had been the practice.

Beginning June 28, the Illinois Central will run two additional passenger trains between Chicago and St. Louis, and the "Diamond Special," which now leaves Chicago at 10:15 p. m., and arrives in St. Louis 7:24 a. m., will leave Chicago at 11:45 p. m. and reach St. Louis at 7:49 the following morning; and its counterpart from St. Louis to Chicago will leave at 11:47 p. m. and reach Chicago at 7:59 a. m., instead of leaving St. Louis at 9:12 p. m. and reaching Chicago at 7:15 a. m. as at present. A new "daylight" train will leave Chicago at 10:02 a. m. and arrive in St. Louis at 6:02 p. m., and, returning leave St. Louis at 11:28 a. m. and reach Chicago at 7:28 p. m. Another train, the "Chicago Express," will leave Chicago at 9:10 p. m. and reach St. Louis at 7:24 a. m., and from St. Louis to Chicago will leave at 9:10 p. m. and arrive at 7:15 a. m. The new trains will be all-steel, electric lighted, and each will be equipped with an observation-parlor car, cafe-club car, coach, and combination coach and baggage car.

#### Car Surpluses and Shortages.

Arthur Hale, chairman of the committee on relations between railways of the American Railway Association in presenting statistical bulletin No. 97, giving a summary of car shortages and surpluses by groups from February 2, 1910, to June 7, 1911, says:

"There is little change in the car situation since our last report,

the total surplus being 169,006, an increase of 773 cars. Box cars increased 1,456, coal and gondola 249. This was partially offset by a decrease of 949 in the flat car surplus. Notwithstanding the increase in surplus box there is an indication of a tightening in the supply of this class, owing to the approach of the grain shipping season. Attention is called to the report of a shortage of 812 box cars in group 11, which also reports a decrease of some 600 in the surplus of this class."

The accompanying table gives surpluses and shortages by groups for the last period covered by the report and the charts show bi-weekly totals from 1907 to 1911 inclusive.

#### INTERSTATE COMMERCE COMMISSION.

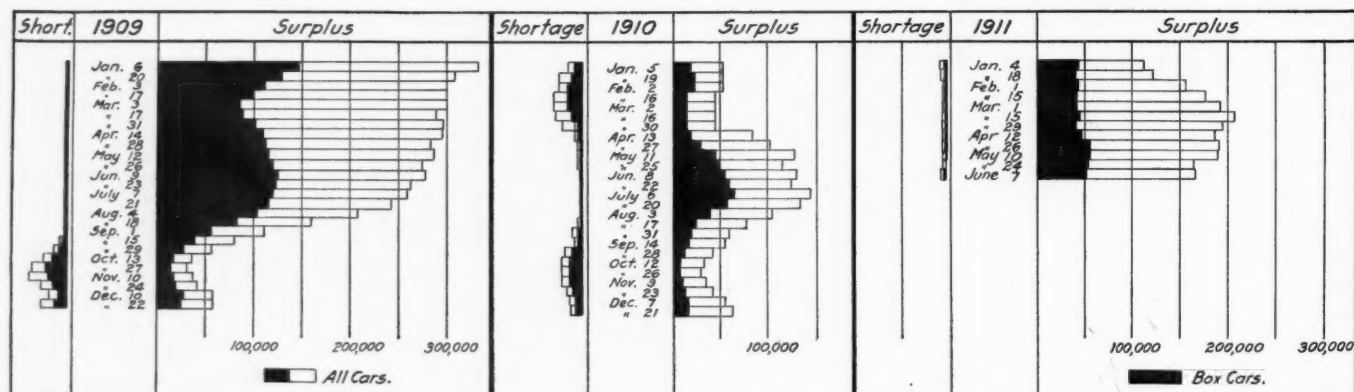
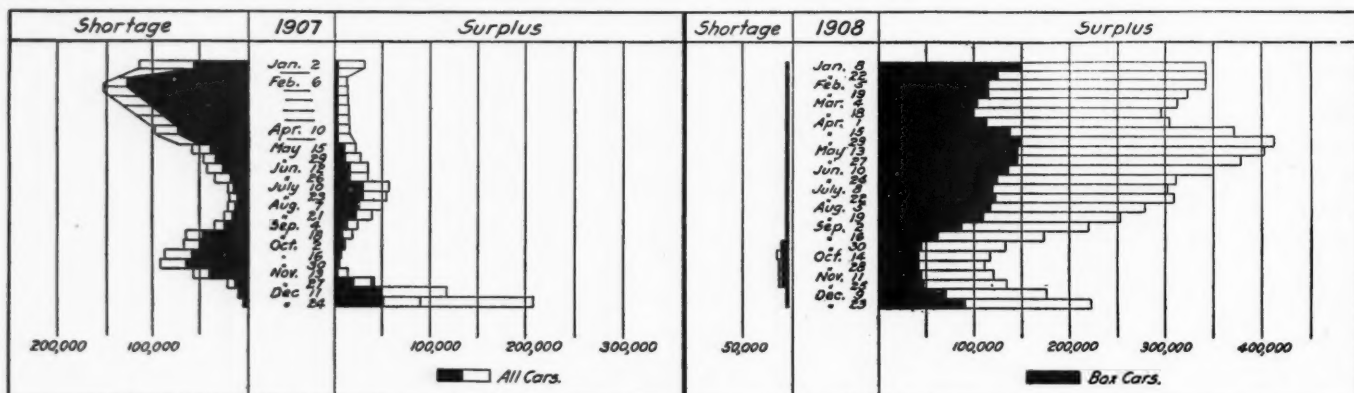
The commission has suspended until July 15, certain tariffs on coke, presented by the Norfolk & Western, the Pennsylvania and the Chesapeake & Ohio.

The commission has suspended until October 28, the rule of the new classification of the Trunk Lines and Central Traffic Association Lines, increasing the minimum price on single shipments of freight.

The Illinois Central; the Grand Rapids & Indiana; and the Louisville & Arkansas have been authorized, for limited periods,

CAR SURPLUSES AND SHORTAGES.												
Date.		No. of roads.	Surpluses				Shortages					
			Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.
Group #1.—	June 7, 1911.....	8	501	482	934	261	2,178	260	34	0	17	311
"	2.— " 7, 1911.....	25	2,193	147	18,362	6,957	27,659	0	0	0	0	0
"	3.— " 7, 1911.....	25	10,153	1,541	36,915	3,811	52,420	0	0	0	101	101
"	4.— " 7, 1911.....	10	1,747	105	3,912	1,160	6,924	11	177	0	0	188
"	5.— " 7, 1911.....	19	4,930	461	4,694	2,044	12,129	11	8	0	1	20
"	6.— " 7, 1911.....	26	11,165	948	3,538	5,624	21,275	0	0	0	4	4
"	7.— " 7, 1911.....	5	1,714	80	648	699	3,141	0	0	0	0	0
"	8.— " 7, 1911.....	16	7,601	171	2,013	4,109	13,894	0	0	0	0	0
"	9.— " 7, 1911.....	11	2,273	538	295	709	3,815	0	53	0	0	53
"	10.— " 7, 1911.....	22	8,503	2,183	2,136	9,640	22,462	26	2	0	5	33
"	11.— " 7, 1911.....	6	1,871	136	15	1,087	3,109	812	182	0	500	1,494
Total .....		173	52,651	6,792	73,462	36,101	169,006	1,120	456	0	628	2,204

\*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland, and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia, and Florida lines; Group 6—Iowa, Illinois, Wisconsin, Minnesota and the Dakotas lines; Group 7—Montana, Wyoming and Nebraska lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Oregon, Idaho, California and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortages, 1907 to 1911, Inclusive.



to continue the use of passenger tariffs containing some fares which are higher for shorter distances than for longer.

The commission has refused to approve proposed advances in rates on rice and rice products. Instead it holds that the rates on rice and rice products should be the same from Orange and Beaumont, Tex., via Galveston by rail and ocean to north Atlantic ports. These rates should not exceed the corresponding rates from Houston by more than three cents per 100 lbs. The difference between carload rates and less than carload rates from Beaumont and Orange to said destinations ought not to exceed 10 cents per 100 lbs.

#### Discrimination Against Fremont.

*Fremont Commercial Club v. Chicago, Burlington & Quincy et al. Opinion by the commission:*

Defendants charge for the transportation of coal from Missouri, Kansas, Arkansas and Oklahoma points to Fremont, Neb., rates which are from 25 cents to 59½ cents per net ton higher than the rates from the same points of origin to Omaha, Neb., while the rates from the same points of origin to Lincoln, Neb., are uniformly 15 cents higher than the rates to Omaha. Present rates are unduly prejudicial to Fremont to the extent that they exceed the rates to Lincoln by more than 10 cents per net ton. From certain points on the Chicago, Burlington & Quincy Railroad in Colorado and Wyoming the rates on coal other than slack to Fremont are 35 cents per net ton in excess of the rates to Omaha and Lincoln; these rates are unduly prejudicial to Fremont to the extent that they exceed the rates to Lincoln by more than 10 cents per net ton. (21 I. C. C. 74.)

#### Rates Prescribed for Locomotives and Tenders.

Having suspended advances in rates for the transportation of locomotives and tenders named in a tariff proposed by certain southern railways, the commission investigated the subject and now holds:

1. Locomotives and locomotives and tenders, live or dead, on their own wheels, are somewhat in the nature of an anomalous commodity particularly susceptible to individual treatment and should not be subjected to class rates.
2. Whatever may be the effect of water competition it cannot be extended, theoretically or practically, to articles to which such competition does not apply by merely classing them with other things to which it does apply.
3. The proposed change from a rate per mile regardless of weight to sixth class rates at 50 per cent. actual weight found to result in charges which will be unreasonable.
4. The cost of transportation is likely to vary with some degree of directness with the weight of the article to be transported, and in so far as cost is a factor in rate making, weight must likewise be a factor.
5. The total disregard of weight existing under the mileage basis, as applied to dead locomotives, found to be unfair to the carrier and discriminatory as between shippers.
6. Rate per ton per mile, graduated according to distance, prescribed for the transportation of locomotives and locomotives and tenders, dead, on their own wheels, and rate per mile prescribed for the transportation of locomotives and locomotives and tenders, live, on their own wheels.
7. While every effort conducive to uniformity of classification is to be commended, it does not follow that that result should be attained by accepting as a standard a classification prescribing a rate which when applied to a given commodity or territory becomes unreasonable.

The opinion, by Commissioner Meyer, says that the proceeding had its inception in a complaint filed July 30, 1910, by the Southern Iron & Equipment Company, of Atlanta, Ga., attacking the reasonableness of a change proposed to be made by the southern classification committee in the rating of locomotives. Under southern classification, of October 1, 1897, locomotives, dead, took a rate of 20 cents a mile, and when accompanied by an attendant he was passed free one way. Effective February 1, 1900, the attendant was given free transportation in both directions. On November 1, 1902, the rate was advanced to 30 cents a mile, and on January 5, 1904, to 35 cents a mile, which is the rate now, the only change being the withdrawal on August 26, 1907, of free transportation for the attendant. . . . Obviously

the lighter locomotives cannot fairly be taxed with a rate based upon the heavier equipment, for if 35 cents per mile were a reasonable charge for a 200-ton locomotive, manifestly it would be unreasonable for the transportation of a locomotive weighing only 50 tons.

The heaviest movement is in second-hand locomotives which are used by short or industrial lines, new locomotives seldom being used by any but the larger railways. When, on account of obsolescence, locomotives have outlived their usefulness on the lines of the larger companies, they are ordinarily purchased by second-hand locomotive dealers, overhauled and repaired, and sold to lumber mills or other industrial plants. The average price paid by dealers for these locomotives is \$1,600, and after being repaired they are sold for about \$3,500. The value of new locomotives varies from about \$10,000 to \$20,000, the average being about \$13,000. While no distinction has been made in the rates on new and second-hand locomotives, the dealers in and users of the latter are the ones most directly affected by any change in these rates.

The total disregard of weight under the mileage basis is manifestly unfair to the carrier and discriminatory as between shippers. . . . It was contended by the carriers that locomotives should take sixth class rates because of their analogy to machinery, which takes sixth class rates. But, though there may be some physical analogy between locomotives on their own wheels and some of the articles which now take sixth class, considering all the circumstances connected with their transportation, we believe locomotives on their own wheels to be much in the nature of an anomalous commodity particularly susceptible to individual treatment.

In official classification territory locomotives moved on a mileage rate of 30 cents prior to 1899, since which time fifth class rates, with a weight allowance of 50 per cent., have applied. Through rates from points in this territory to points in southern classification territory are constructed on a combination on the Ohio river, using class rates to the river and mileage rates south.

The fifth class rate from Philadelphia to Norfolk, a distance of 255 miles, is 14 cents, yielding a per-ton-mile revenue of 5.5 mills based on gross weight. From Pittsburgh to Cincinnati, 309 miles, the rate is 15 cents, and the per-ton-mile revenue 4.8 mills. From Cincinnati to Cadillac, Mich., 331 miles, the rate is 20 cents, and the per-ton-mile revenue 6 mills.

In western classification territory locomotives take class E, which from East St. Louis to Topeka, Kan., 339 miles, is 16½ cents, yielding a per-ton-mile revenue of 5 mills.

It is contended that the establishment of class rates on locomotives in southern classification territory will make for simplification of rate construction and uniformity of classification. While every effort conducive to such uniformity is to be commended, it by no means follows that that result should be attained by accepting as a standard a classification prescribing a rating which when applied to a given commodity or territory becomes unreasonable.

Under the mileage rate of 35 cents, and based on gross weights, the per-ton-mile revenue for all distances is 9.75 mills for the transportation of locomotives weighing 36 tons, 5.83 for locomotives weighing 60 tons, and 1.75 for those weighing 200 tons. Under the class rate from Atlanta to Dyersburg the revenue per ton per mile will be 12.4 mills, while to Columbia, S. C., and to Asheville, S. C., the per-ton-mile revenues will be 11.7 and 20.1 mills, respectively. From Albany to Milton, Fla., there is an increase to 30.7 mills, while from Cincinnati to Atlanta the revenue per ton per mile will be 8.6 mills, to Birmingham 7.1 mills, and to New Orleans, La., 4.7 mills.

There are numerous instances of inequalities produced by the application of class rates. From Atlanta to Milton and to Marianna, Fla., the distances being 357 and 385 miles, respectively, and the rates are 42 and 60 cents. While under the present mileage basis Milton has a reasonable advantage, under the class basis it takes a rate, per 60-ton locomotive, \$108 less than Marianna. It is well known that class rates in southeastern territory have been very materially shaped by water competition. It is admitted by all parties in this proceeding that locomotives on their own wheels cannot be affected by water competition, but it was argued that that was no reason why they should not be included within class rates, which are partly the result of water competition, for the reason that the same argument might be directed against many other articles in the classification, which

likewise were not influenced by water competition. We do not believe that this line of argument is meritorious. It is hardly conclusive to argue that, simply because there are many other articles in the classification not subject to water competition, it is not objectionable to place locomotives, which are admittedly not subject to water competition, into one of these classes. Courts and commissions have long recognized the validity of water competition. Whatever may be the effect of water competition, it cannot be extended, theoretically or practically, to articles to which such competition does not apply by merely classifying them with other things to which it does apply. It appears to us, therefore, that this argument, with respect to the absence of water competition on certain articles in the southern classification, merely points out the necessity of segregating those which are affected by water competition and those which are not so affected. It cannot force locomotives into an unnatural class.

We are therefore of the opinion that at least in the territory here involved locomotives should not be subjected to class rates, but that a rate should be found which will give proper regard to both weight and distance—two universally recognized fundamental factors in rate making.

Both as a matter of equity and expediency it is rare indeed that a flat ton-mile rate can be prescribed. The great diversity in the characteristics of the objects transported, as well as the kaleidoscopic succession of the conditions under which this transportation takes place, combine to make such a rate, when universally applied, both unreasonable and discriminatory. It is not so in the instant case. Locomotives, as suggested above, stand in a class by themselves and present a rate problem in many respects different perhaps from any that has heretofore been brought to our attention.

Under all the circumstances, and accepting as a basis the per-ton-mile revenue of 5.83 mills arrived at by applying the present mileage rate of 35 cents to the average gross weight of 60 tons, or 120,000 lbs.; we are of the opinion and find that a reasonable rate for the transportation of locomotives, and locomotives and tenders, dead, on their own wheels, in southern classification territory, should not exceed the following rate per-ton-mile applied to the gross weight of locomotives, and locomotives and tenders:

Distance.	Rate per ton per mile, gross weight of locomotives. Mills.
Not over 200 miles.....	6.0
Over 200 and under 300 miles.....	5.8
Over 300 and under 400 miles.....	5.6
Over 400 and under 500 miles.....	5.4
Over 500 and under 600 miles.....	5.2
Over 600 and under 700 miles.....	5.1
Over 700 miles.....	5.0

The application of this basis will give to the shippers approximately the same rates they now enjoy when they ship locomotives whose weight does not exceed 60 tons, while, when that weight is exceeded, the carrier will be fully compensated for the additional tonnage.

The rates prescribed represent no more than an approximation of what the schedule would be were all the data available for a detailed analysis of terminal and line expenses. In calculating the total charge the rate applicable to its respective zone should be applied for the distance in that zone only. The rate applicable to the final zone should not be applied to the entire haul. It is obvious that for distances under 200 miles there is a uniform charge of 6.0 mills per ton per mile. But the charge for 300 miles is not  $300 \times 5.8$ , but  $(200 \times 6.0) + (100 \times 5.8)$ . The charge for 575 miles is not  $575 \times 5.2$ , but  $(200 \times 6.0) + (100 \times 5.8) + (100 \times 5.6) + (100 \times 5.4) + (75 \times 5.2)$ .

While it is possible to express the rate for any given distance on a uniform mileage basis, the above distance tariff doubtless can be applied in the manner suggested without difficulty.

While the original complaint also attacked the change proposed to be made in the classification of locomotives, live, or moving by their own power, and while our order also suspends this item, no one was prepared at the hearing to offer any testimony regarding such movements. The complainants stated that it was not interested in the transportation of locomotives, live, and a witness for one of the carriers stated that his records showed only one movement of this kind during a period of more than a year. Another witness for the carriers stated that, in his opinion, dead and live locomotives should take the same rate. However, the conditions presented in the transportation of a live locomotive

are materially different from those attendant upon the transportation of a dead locomotive, for the reason that, as the carrier furnishes only trackage and no motive power, weight is almost an immaterial factor. It is true that such a movement is similar to the movement of an entire train so far as train despatching is concerned, but it would seem that a flat rate per mile properly might be charged in such cases.

As no testimony was offered upon this point, we conclude that the proposed change must be withdrawn and a rate not in excess of 30 cents a mile maintained.

The order prescribing rates is to go into effect August 1, and it is addressed to roads in Northern and Western as well as Southern territory, the list of roads filling seven pages. (21 I. C. C. 1,581.)

#### Milling-in-Transit Privilege Not Sustained.

*Douglas & Company v. C. R. I. & P. et al. Opinion by Commissioner McChord.*

Upon supplemental complaint alleging that defendants had canceled certain transit privileges which were established in compliance with the commission's decision in the prior case, certain tariffs were suspended and investigation made. It appears that more than two years have elapsed between the time of the first decision and the filing of the supplemental complaint; *Held*, Upon the present record that the withdrawal of the transit rates heretofore accorded does not work undue preference or unjust discrimination. A privilege, savoring as this does of a gratuity, however valuable and beneficial and however difficult of relinquishment, can not, as a matter of law, be continued by this commission, unless the original granting of the privilege rested on some legal obligation which under the law affords ground on which the commission could, as an original proposition, require that it be granted, or, if discontinued, order it restored. Supplemental complaint dismissed and orders suspending tariffs vacated.

The original complaint arose from the withdrawal of certain milling-in-transit rates at Cedar Rapids under which corn was manufactured into starch and the starch was forwarded to destinations at the corn rates. Under the tariffs then in force and the conditions then existent the commission found that the withdrawal of the transit privileges created unjust discrimination against complainant. No order was issued and defendants removed the unjust discrimination by restoring transit privileges at Cedar Rapids to the satisfaction of complainant.

Defendants did not attempt to withdraw all transit rates and privileges on corn manufactured into starch at Cedar Rapids. Under the proposed Illinois Central tariffs transit arrangements are continued to all points in Illinois on the north of a line drawn through Havana, Springfield, Decatur and Champaign. To Illinois points south of that line and to points in southeastern and Carolina territories the proposed tariffs apply the rates on corn to Cedar Rapids and the starch rates from Cedar Rapids to destination, or the rates on corn to the basing points and the starch rates beyond, whichever makes lower. One important consideration in the previous decision was the discrimination then shown against complainant and in favor of a competitor at Pekin, Ill. Pekin was at the time of the former hearing the only point on the Illinois Central road aside from Cedar Rapids which had transit arrangements similar to those in force at Cedar Rapids, and they have since been withdrawn at Pekin. No point on the Rock Island road other than Cedar Rapids has this transit privilege.

An important point in the previous case was the fact that the Chicago, Burlington & Quincy had in effect transit arrangements at Keokuk. It is understood that if the Illinois Central tariff becomes effective the Chicago, Burlington & Quincy transit privilege at Keokuk will be at once limited. The conditions which obtained at the time of the previous hearing have been materially changed. There is now no transit on starch at Pekin and there will be none at Keokuk. There is no transit on starch made from corn from Iowa at Decatur, and the rates applicable there on products of corn from other than Iowa points is the product rate from the point of origin of the corn to the destination of the product. The Decatur plant does not manufacture starch. It produces corn flour which is somewhat similar to, but chemically different from, powdered starch. Starch is manufactured at Chicago, Argo, and Waukegan, Ill., and at Robey and Indianapolis, Ind., at which points it enjoys no transit privilege.



Defendants contend that the arrangement now in force results in rates that are unreasonably low and that the rates under the proposed tariffs will be reasonable. They show that the proposed rates through Cedar Rapids will in no instance be higher than those through other points at which starch is manufactured, and that in some cases they will be lower.

The Supreme Court in *Southern Pacific Co. v. I. C. C.*, 219 U. S., 433, has decided, among other things, that money invested on the faith of the maintenance of a certain rate structure does not require carriers to indefinitely or forever continue that adjustment. The fact that agents of a carrier solicit traffic carries with it no obligation and no liberty to do other than to charge the lawfully established tariff rates.

A full review of the record demonstrates that a situation now obtains, and will result if the contemplated action of the carriers is permitted to become effective, different from that which formed the basis of the former decision. It is seen from complainant's testimony that it is at no disadvantage in the purchase of corn; that is, "In securing their material for milling." Complainant is on an equality with all other purchasers of corn. It is admitted that there is no competition between the products or the by-products of complainant's plant and the cereal plant at Cedar Rapids. Therefore, there is here no "competition between the millers of grain either in marketing their product or in securing their material for milling." No transit privilege on corn manufactured into starch is accorded any other manufacturer on the lines of defendants. Transit to certain territory is still accorded to complainant.

The supplemental petition must be dismissed and such an order will be entered. An order will also be entered vacating the orders suspending the tariffs in question. (21 I. C. C. 1580.)

#### STATE COMMISSIONS.

The California State Railroad Commission, acting under section 15 of the new railway law of that state, is to make a general investigation of highway grade crossings in Los Angeles county.

The State Railroad Commission of Tennessee has authorized the Tennessee Central to adopt a general rate of 3 cents a mile for passenger fares on that part of its road east of Nashville, raising the rate from 2½ cents. West of Nashville the rates are already on the 3-cent basis.

The governor of New Hampshire has appointed as members of the new Public Service Commission of that state, Edward C. Niles of Concord; John E. Benton of Keene; and Prof. T. W. D. Worthen of Hanover. Messrs. Niles and Benton are young lawyers, classed as progressive republicans. Prof. Worthen is at the head of the department of mathematics in Dartmouth college, and is classed as a progressive democrat. Governor Bass says that he tried, without success, to secure Prof. F. H. Dixon of Dartmouth.

#### COURT NEWS.

The Supreme Court of California, in a suit against the Southern Pacific, has affirmed the verdict of a lower court for \$70,000 damages for personal injuries.

The federal court at Columbus, Ohio, has dissolved the injunction, which has been in effect for nearly a year past, under which the Chesapeake & Ohio was forbidden to vote on its stock in the Hocking Valley.

In the Common Pleas Court at Columbus, Ohio, June 17, a temporary injunction was granted against the enforcement of the recent order of the Ohio State Railroad Commission, promulgating car demurrage rules and applying them to cars used in interstate, as well as intrastate business. The injunction was applied for by fifty railways.

In the United States Circuit Court at New York City this week, Judge Lacombe has decided in favor of the express companies in the suit which was brought in their behalf against the city of New York last autumn, at the time of the strike of wagon drivers. When men were brought from other cities to take the place of strikers on the wagons, the city hampered the efforts of the companies to break the strike by its action in requiring each driver to be licensed. The present decision holds that drivers engaged in interstate commerce cannot be required to submit to a city ordinance requiring them to be licensed.

## Railway Officers.

### ELECTIONS AND APPOINTMENTS.

#### Executive, Financial and Legal Officers.

G. W. Vallery, general manager of the Colorado Midland, has been elected president, with office at Denver, Colo., succeeding A. D. Parker.

H. T. Evans has been appointed auditor of the Chicago, Indianapolis & Louisville, with office at Chicago, succeeding Joseph L. Doherty, deceased.

W. B. Rodman has been appointed general solicitor of the Norfolk Southern, with office at Norfolk, Va., succeeding Edward R. Baird, Jr., resigned, effective July 1.

Clark B. Ferry, assistant secretary of the Chicago, Milwaukee & St. Paul, since January, 1883 has become senior assistant secretary of that company by the death of James M. McKinlay, with office at New York.

J. E. Votaw, general superintendent of the Marshall & East Texas, has been elected vice-president and general manager, with office at Marshall, Tex., and his former position has been abolished. E. Key, assistant treasurer, has been elected treasurer, and J. I. Hey, auditor and assistant secretary, has been elected secretary, both with offices at Marshall, Tex.

John Millen, vice-president and general manager of the Duluth & Northern Minnesota, at Duluth, Minn., has been elected president, with office at Duluth, succeeding B. W. Arnold of Albany, N. Y., elected vice-president.

Henry Irving Miller, whose election as president of the New Orleans Great Northern was recently announced in these columns, was born at Cleveland, Ohio, and received a public school and collegiate education.



H. I. Miller.

In 1880 he entered the service of the Pennsylvania Lines West of Pittsburgh, and after serving for some time in the engineering department, he was consecutively assistant engineer, engineer, and then superintendent of the Richmond division; and later was appointed superintendent of the Louisville division. In April, 1894, Mr. Miller was made superintendent of the Main Line division of the Vandalia Railroad, extending from Indianapolis to St. Louis, and in June, 1901, he was appointed general manager of that road. He left the Vandalia in December,

1903, to become general manager of the Chicago, Rock Island & Pacific, remaining in that position until March 1, 1905, when he was elected second vice-president and general manager of the Chicago & Eastern Illinois, the Evansville & Terre Haute, the Evansville & Indianapolis, and the Evansville Belt Railway; and in November, 1907, he was elected president of these properties. He resigned from these various positions on December 1, 1909. In May, 1910, he was appointed receiver of the Buffalo & Susquehanna, which position he still occupies, and in December of the same year he was elected first vice-president of the New Orleans Great Northern and the Great Southern Lumber Company, and on May 26, 1911, he was elected president of these companies. Since April last Mr. Miller has been a director of the Missouri Pacific, and on May 23, he became vice-president and a member of the executive committee of that road. On the M. P. Mr. Miller will act in an advisory capacity to the chairman of the board of directors. His headquarters are at New York.

**Operating Officers.**

D. Salle has been appointed trainmaster of the Missouri, Oklahoma & Gulf, with office at Calvin, Okla., succeeding D. Sullivan, resigned.

E. F. Donohue has been appointed car accountant of the Texas & Pacific, with office at Dallas, Tex., succeeding C. Ludolph, promoted.

The office of J. H. Rosenstock, superintendent of the Susquehanna division of the Delaware & Hudson, has been transferred from Albany, N. Y., to Oneonta.

W. E. Roberts, trainmaster of the Canadian Northern at Dauphin, Man., has been appointed superintendent of District No. 6, with office at Brandon, Man.

J. A. McDougal, superintendent of terminals of the Missouri Pacific at Little Rock, Ark., has been appointed superintendent of the Arkansas division, with office at Little Rock, succeeding J. F. Murphy, promoted.

F. W. Green, general superintendent of the Louisiana & Arkansas at Stamps, Ark., has been appointed general manager, with headquarters at Stamps, a new office. He will have general control and direction of the construction, operating and maintenance departments.

J. W. Dodge, chief clerk to the general superintendent of the southern lines of the Illinois Central at New Orleans, La., has been appointed superintendent of the New Orleans division of the Yazoo & Mississippi Valley, with office at Vicksburg, Miss., succeeding B. F. Galvani, resigned.

B. C. Crow, chief clerk in the office of the general manager of the Texas & Pacific at Dallas, Tex., has been appointed general superintendent and general freight and passenger agent of the Weatherford, Mineral Wells & Northern, with office at Weatherford, Tex., succeeding P. E. Bock, resigned to accept service elsewhere.

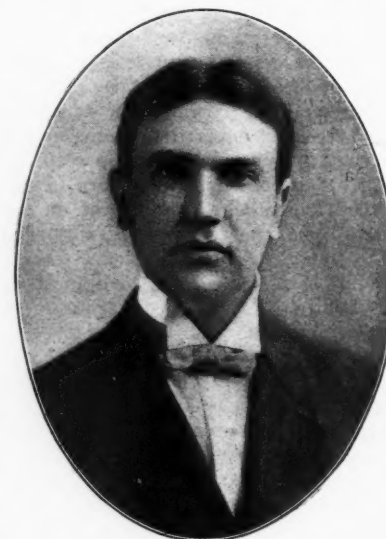
P. E. Bock, whose appointment as general superintendent of the Gulf, Texas & Western, with office at Jermyn, Tex., has been announced in these columns, began railway work in April, 1881, in the construction department of the Denver, Utah & Pacific, now a part of the Chicago, Burlington & Quincy, at Denver, Colo., and remained with that road in the operating and mechanical departments until 1890, when he took charge of the construction of the Weatherford, Mineral Wells & Northwestern, in Texas. On the completion of that road he was train conductor until February, 1892, when he was appointed superintendent. In October, 1898, he was elected also vice-president, and assumed the duties of general freight and passenger agent, with office at Weatherford, Tex., from which he now resigns to go to the Gulf, Texas & Western, as above noted.

Beginning June 19, the Missouri Pacific System will be operated in three districts as follows: The Eastern district, with headquarters at St. Louis, Mo., comprising the St. Louis Terminal, Illinois, Missouri, Eastern, Joplin and White River divisions; J. F. Murphy, superintendent at Little Rock, Ark., has been appointed general superintendent; R. J. Turnbull, division master mechanic at Osawatomie, Kan., has been appointed assistant superintendent of machinery; and Phil Carroll, division engineer at Poplar Bluff, Mo., has been appointed engineer maintenance of way. The Western district, with headquarters at Kansas City, Mo., comprising the Kansas City Terminal, Omaha, Northern Kansas, Central Kansas, Colorado, Wichita and Southern Kansas divisions; W. J. McKee has been appointed general superintendent; W. L. Tracy, assistant superintendent of machinery; and J. R. Leighty, engineer maintenance of way. The Southern district, with headquarters at Little Rock, comprising the Arkansas, Memphis, Valley, Natchez and Central divisions; M. M. Richey has been appointed general superintendent; D. W. Cunningham, assistant superintendent of machinery; and E. J. Correll, engineer maintenance of way. (See item in General News Section.)

The jurisdiction of the general superintendent, the assistant superintendent of machinery and the engineer maintenance of way of the Southern district of the Missouri Pacific System, and that of the superintendent, the master mechanic and the division engineer of the Valley division, has been extended over

the line from Alexandria, La., to Lake Charles, which will hereafter be operated as the Lake Charles district of the Valley division. The jurisdiction of similar officers of the Eastern district and of the Illinois division has been extended over the Coal Belt division, which will hereafter be operated as the Coal Belt district of the Illinois division. The jurisdiction of officers of the Omaha and Northern Kansas divisions having been separated, A. DeBernardi, superintendent at Atchison, Kan., has been appointed superintendent of the Omaha division, with office at Falls City, Neb., and J. F. Russ, trainmaster at Concordia, Kan., has been appointed superintendent of the Northern Kansas division, with office at Atchison, Kan. (See item under Engineering and Rolling Stock Officers.)

Edward Wilson Mason, whose appointment as division superintendent of the Western Pacific, with office at Sacramento, Cal., has been announced in these columns, was born March 23, 1877,



E. W. Mason.

at Moberly, Mo. He received a public school education and began railway work in June, 1893, as a night caller in the operating department of the Northern Pacific at Tacoma, Wash. Two years later he was transferred to the South Tacoma shops as night operator, and was then consecutively relay operator, ticket clerk and operator, despatcher, then night chief despatcher and chief despatcher, filling these offices at different times at Tacoma, at Helena, Mont., and at Missoula. His next promotion was to trainmaster, which position he resigned in November, 1909, to go

with the Western Pacific, after having been with the Northern Pacific continuously, except for six months in 1902-1903, when he was trainmaster at Kent, Wash., for the Puget Sound Electric Railway. He was then made superintendent of telegraph and car accountant of the Western Pacific, from which office he has been promoted as above.

**Traffic Officers.**

Russell C. Thompson has been appointed a traveling freight agent of the Georgia Railroad, with office at Tampa, Fla.

G. W. Lee has been appointed traveling immigration agent of the Mobile & Ohio, with headquarters at St. Louis, Mo.

C. R. Alvarez has been appointed a soliciting freight agent of the Seaboard Air Line, with office at Tampa, Fla., succeeding W. H. Drew, resigned.

George W. Vaux has been appointed traveling passenger agent of the Southern Pacific, with office at Toronto, Ont., succeeding J. O. Goodsell, transferred.

Charles Hall, assistant general freight agent of the St. Louis & San Francisco at St. Louis, Mo., has been appointed general western freight agent, with headquarters at San Francisco, Cal., a new office.

Edward S. Giles, chief of the tariff bureau of the Delaware, Lackawanna & Western, has been appointed assistant general freight agent, with office at New York, and his former position has been abolished.

T. E. Brazelton, traveling freight agent of the Gulf, Colorado & Santa Fe at Dallas, Tex., has been appointed industrial agent, with office at Galveston, Tex., succeeding S. A. Kendig, colonization agent, deceased.

W. H. Foust, chief clerk to the assistant general passenger agent of the Baltimore & Ohio at Pittsburgh, Pa., has been ap-



pointed traveling passenger agent, with office at Pittsburgh, succeeding Arthur W. Tiddy, deceased.

Press Nicholls, formerly soliciting freight agent of the Atchison, Topeka & Santa Fe at Beaumont, Tex., has been appointed commercial agent of the Mallory Steamship Company, with office at San Antonio, Tex., succeeding S. C. Timpson, resigned.

J. F. Jutz has been appointed a traveling freight agent of the Union Pacific, with office at St. Louis, Mo., succeeding George Carroll, and M. Meadors has been appointed a contracting freight agent, with office at Los Angeles, Cal., succeeding W. J. Robinson.

J. P. Brandon, district passenger agent of the St. Louis & San Francisco, the Chicago & Eastern Illinois, and the Evansville & Terre Haute, with office at Cleveland, Ohio, has resigned, and for the present M. B. Muxen, district passenger agent at Pittsburgh, Pa., will have jurisdiction over the Cleveland territory.

F. L. Corwin, commercial agent of the Central of Georgia, at Jacksonville, Fla., has been appointed Florida freight agent, and J. R. Randolph, traveling freight agent, at Jacksonville, succeeds Mr. Corwin, both with offices at Jacksonville. H. E. Shepard has been appointed a commercial agent, with office at Tampa.

W. L. McWhirter, commercial agent of the Atchison, Topeka & Santa Fe at Galveston, Tex., has been appointed general agent, with office at New Orleans, La., succeeding W. J. Nolan, appointed soliciting freight agent at Beaumont, Tex. Albert R. Bone has been appointed soliciting freight agent at Galveston, succeeding to the duties of Mr. McWhirter.

Holman D. Waldron, assistant general passenger agent of the Maine Central and its controlled lines, has been promoted to the position of general passenger agent; office at Portland, Me. Mr. Waldron succeeds Frederick E. Boothby, who has been at the head of the passenger department of the Maine Central for 37 years. Col. Boothby has for many years been a prominent member of the American Association of General Passenger and Ticket Agents.

M. C. Broughton, district freight solicitor of the Pennsylvania Railroad at Easton, Pa., has been appointed freight solicitor, with office at Pittsburgh, succeeding E. B. Mitchell, promoted. W. J. Hickey, freight solicitor, at Rochester, N. Y., succeeds Mr. Broughton. Bruce K. Wimer, freight solicitor at Easton, succeeds Mr. Hickey; Edward S. Neilson, freight solicitor at New Haven, Conn., succeeds Mr. Wimer; W. S. Franklin, Jr., freight solicitor, with office at Baltimore, Md., succeeds Mr. Neilson, and S. T. Stackpole succeeds Mr. Franklin.

Iverson Lea Graves, whose appointment as coal freight agent of the Southern Railway, with office at Atlanta, Ga., has been announced in these columns, was born June 21, 1870, at Augusta, Ga. He was educated at Emory College, Oxford, graduating with the degree of A. B. in the class of 1891. The following year he began railway work with the Richmond & Danville, now a part of the Southern Railway, and was for two years in the law department of that road, and then for one year was out of railway work. He was then with the operating department of the Plant System of Railways for one year, then one year with the Southeastern Car Service Association at Atlanta, and since January, 1897, in the executive and traffic department of the Southern Railway. At the time of his recent appointment as coal freight agent he was general freight agent at Memphis, Tenn.

L. L. McCleskey, whose appointment as assistant general freight agent of the Southern Railway, at Atlanta, Ga., has been announced in these columns, was born at Monroe, Walton county, Ga., and was educated at the University of Georgia. He began railway work in 1875 as soliciting agent on the Port Royal & Augusta, now a part of the Charleston & Western Carolina, and the following year went to the Atlantic Coast Line as soliciting freight agent. About two years later he was appointed passenger agent of the Associated Railways of Virginia & Carolina, remaining in this position until April, 1881, when he was appointed commercial agent of the Richmond & Danville, now a part of the Southern Railway, and about three years later was made assistant general freight and passenger agent of the same road. In March, 1898, he was appointed division freight agent of the Southern Railway, and in November, 1909, was appointed assistant to general freight agent, which position he held until his recent appointment as above noted.

James Westmoreland Hunter, whose appointment as assistant general freight agent of the Southern Railway, with office at Mobile, Ala., has been announced in these columns, was born on February 23, 1871, at Atlanta, Ga., and was educated in the public schools of his native town. Mr. Hunter began railway work on December 17, 1890, as stenographer in the office of the assistant general freight agent of the East Tennessee, Virginia & Georgia, now a part of the Southern Railway, and was later chief clerk. In February, 1896, he was appointed chief clerk to the division freight agent of the Southern Railway, at Raleigh, N. C. The following May he went to the passenger department of the Georgia & Alabama, now a part of the Seaboard Air Line, and from April, 1897, to June, 1899, was rate clerk and chief clerk in the division freight office of the Southern Railway, at Birmingham, Ala., and in June, 1899, he was promoted to soliciting agent. He was then made commercial agent, and later division freight agent at Selma, which position he held at the time of his recent appointment as assistant general freight agent.

Joseph H. Brown, whose appointment as general freight and passenger agent of the Gulf & Ship Island, with office at Gulfport, Miss., has been announced in these columns, was born November 16, 1873, at Rochester, N. Y. Mr. Brown began railway work in August, 1886, with the Blue Line (fast freight line), and in 1896 he was appointed a rate clerk on the Michigan Central, at Chicago. The following year he was appointed chief rate and percentage clerk in the general freight department, at Detroit, and in 1898 was appointed general accountant of the North Shore Despatch. In 1899 Mr. Brown was appointed chief clerk to the assistant general freight agent of the Michigan Central, at Chicago, and the following year he was made chief clerk to the freight



J. H. Brown.

traffic manager, at Detroit of the same road. He was appointed manager of the North & South Despatch, in 1906, with office at Chicago, and three years later was appointed assistant general freight agent of the Michigan Central, with office at Bay City. Now he becomes general freight and passenger agent of the Gulf & Ship Island, as above noted.

#### Engineering and Rolling Stock Officers.

David L. Robertson has been appointed assistant engineer of the New York Central & Hudson River, with office at New York, succeeding S. C. Upson.

F. B. Hart has been appointed roadmaster of the Pecos & Northern Texas, with office at Amarillo, Tex., succeeding J. H. Stinson, transferred to Canadian, Tex.

W. H. Sample has been appointed master mechanic of the Ottawa division of the Grand Trunk, with office at Ottawa, Ont., succeeding R. Cowan, assigned to other duties.

P. J. Carter has been appointed assistant engineer of the Gulf, Colorado & Santa Fe, with office at Galveston, Tex., succeeding Kenneth B. Duncan, transferred to Topeka, Kan.

B. S. Wathen, chief engineer of the Texas & Pacific at Dallas, Tex., has been appointed consulting engineer, with office at Dallas. C. H. Chamberlin, assistant engineer at Dallas, has been appointed chief engineer.

F. G. Jonah has been appointed chief engineer of the New Orleans, Texas & Mexico, and the St. Louis, Brownsville & Mexico, with office at St. Louis, Mo., succeeding on the former road M. C. Byers, who will devote his entire time to other parts of the system.

The following have been appointed shop superintendents of the Missouri Pacific and the St. Louis, Iron Mountain & Southern; M. J. McGraw at Sedalia, Mo.; W. C. Smith at Kansas City, Mo.; E. F. Stroeh at Hoisington, Kan.; B. J. Peasley at De Soto, Mo., and B. E. Stevens at Argenta, Ark.

A. R. Cook, engineer maintenance of way of the Northern Pacific lines west of Paradise, at Tacoma, Wash., has been appointed principal assistant engineer, a new office, with headquarters at Tacoma. L. M. Perkins, engineer maintenance of way of the lines east of Paradise at St. Paul, Minn., succeeds Mr. Cook, and Andrew Gibson, head of the timber department at Missoula, Mont., succeeds Mr. Perkins.

Incident to the re-districting of the Missouri Pacific System (see items under Operating Officers and in the General News Section), R. J. Trumbull, division master mechanic at Osawatimie, Kan., has been appointed assistant superintendent of machinery of the Eastern district; and Phil Carroll, division engineer at Poplar Bluff, Mo., has been appointed engineer maintenance of way, both with offices at St. Louis, Mo. J. T. Robinson has been appointed master mechanic of the Central Kansas division, with office at Osawatimie, succeeding Mr. Trumbull. E. R. Lockhart, assistant master mechanic at Hoisington, Kan., has been appointed master mechanic of the Colorado division, with office at Hoisington, and his former position has been abolished. The jurisdiction of officers of the Omaha and Northern Kansas divisions having been separated. F. W. Schultz, master mechanic, and O. Rickert, division engineer, both at Atchison, Kan., have been transferred to Falls City, Neb., with jurisdiction over the Omaha division. C. E. McAuliffe, assistant master mechanic at Jefferson City, Mo., has been appointed master mechanic of the Northern Kansas division, with office at Atchison; and H. E. Boardman, whose appointment as division engineer at Atchison was recently announced in these columns, will have jurisdiction over the Northern Kansas division.

#### Purchasing Officers.

C. Ludolph, car accountant of the Texas & Pacific at Dallas, Tex., has been appointed purchasing agent, with office at Dallas, and W. F. Duane has been appointed general storekeeper, with office at Marshall.

Benjamin S. Hinckley, whose appointment as purchasing agent of the Boston & Maine, with office at Boston, Mass., has been announced in these columns, was born November 18, 1875, at Charlestown, and was educated at the Massachusetts Institute of Technology. He began railway work in August, 1899, with the Northern Pacific, and for six years was a special apprentice and dynamometer car operator on that road. In April, 1906, he went to the New York, New Haven & Hartford as chief inspector in the test department, and was appointed engineer of tests in June, 1907, which position he held until his recent appointment as purchasing agent of the Boston & Maine.

#### Special Officers.

Eden B. Hunt has been appointed superintendent of the voluntary relief department of the Pennsylvania Railroad and subsidiary companies, succeeding Spencer Meade, deceased.

#### OBITUARY.

E. M. Kenly, vice-president, general superintendent and chief engineer of the Yakima Valley Transportation Company, died suddenly at his home in North Yakima, Wash., on June 10.

Sylvester T. Smith, formerly president of the Chesapeake Beach Railway, died in Chicago on June 18, at the age of 72 years. Mr. Smith was born at Buffalo, N. Y., and began railway work in 1864 with the Union Pacific (Eastern division), afterwards the Kansas Pacific Railway. He was connected with the accounting and auditing department until October, 1878, when he was made receiver. He was transferred to the operating department in the following year, and from October, 1884, to April, 1887, was general superintendent. He was then for a number of years general manager of the Denver & Rio Grande. He was associated with David H. Moffat in the construction of the Denver, Northwestern & Pacific, and amassed a large fortune in the mining industry in Colorado.

## Equipment and Supplies.

### LOCOMOTIVE BUILDING.

THE INTERNATIONAL & GREAT NORTHERN has ordered nine locomotives from the Baldwin Locomotive Works.

THE ERIE RAILROAD is in the market for 35 Mikado locomotives, 5 Pacific type locomotives and 20 switching locomotives.

THE MEXICO NORTH WESTERN, reported in the *Railway Age Gazette* of June 16 as being in the market for 2 Mallet (2-6-6-2) locomotives and 6 Prairie type locomotives, has ordered these engines from the American Locomotive Company.

THE UTAH RAILWAY has ordered 1 Mikado locomotive from the Baldwin Locomotive Works. The diameter of the cylinders will be 19 in., stroke of piston, 22 in., diameter of driving wheels will be 40 in., and the total weight in working order will be 146,000 lbs.

THE ESCANABA & LAKE SUPERIOR has ordered one 10-wheel locomotive from the Baldwin Locomotive Works. The cylinders will be 19 in. x 26 in., diameter of driving wheels will be 58 in., weight on drivers will be about 107,450 lbs. The total weight of the engine will be 137,750 lbs., and the weight on tender 110,000 lbs., in working order.

THE SOUTHERN RAILWAY, as mentioned in the *Railway Age Gazette* of April 28, has ordered 33 mikado locomotives from the Baldwin Locomotive Works, and 15 Pacific type locomotives from the American Locomotive Company. The dimensions and specifications of these locomotives will be as follows:

	Mikado	Pacific
Type .....	Simple	Simple
Weight on drivers.....	212,300 lbs.	134,000 lbs.
Total weight .....	269,000 lbs.	224,300 lbs.
Diameter of cylinders.....	27 in.	22 in.
Stroke of pistons.....	30 in.	28 in.
Diameter of drivers.....	63 in.	72½ in.
Type of boiler.....	Extended wagon top	Straight top
Working steam pressure.....	175 lbs.	220 lbs.
Heating surfaces, tubes.....	3,019 sq. ft.	3,700 sq. ft.
Heating surface, firebox.....	212 sq. ft.	185 sq. ft.
Heating surface, total.....	3,231 sq. ft.	3,885 sq. ft.
Tubes, number .....	30 5½ in. super-heater	312
Tubes, outside diameter.....	183 ordinary	2½ in.
Tubes, length .....	2½ in.	20 ft. 0 in.
Firebox, type .....	Wide	Wide
Firebox, length .....	108 in.	109 in.
Firebox, width .....	72½ in.	73 in.
Firebox, material and maker...	Carbon acid	Carbon acid
Grate area .....	54 sq. ft.	54 sq. ft.
Tank capacity for water.....	8,000 gals.	7,500 gals.
Coal capacity .....	14 tons	12 tons

#### Special Equipment.

Axles .....	Open hearth steel	Open hearth steel
Bell ringer .....	Improved Golmar	Improved Golmar
Boiler lagging .....	85% magnesia	85% magnesia
Brakes .....	New York	New York
Brake beams .....	Waycott	Waycott
Brake shoes .....	Amer. Brake Shoe & Fdy. Co.	Amer. Brake Shoe & Fdy. Co.
Couplers .....	McConway & Torley	McConway & Torley
Driving boxes .....	Cast steel	Cast steel
Headlight .....	Electric Pyle	Electric Pyle
Injector .....	Hancock	Hancock
Journal bearings .....	Ajax	Ajax
Piston and valve rod packings..	Paxton-Mitchell	Paxton-Mitchell
Safety valve .....	Consolidated	5 engs. consolidated
Sanding devices .....	Viloco	Viloco
Sight-feed lubricators .....	Detroit	13 engs. Michigan
Springs .....	Pittsburgh Spring & Steel Co.	2 engs. Detroit
Staying .....	Ewald	Vanadium
Steam gages .....	Ashton	United States
Steam heat equipment.....	None	Ashton
Superheater .....	Locomotive Super-heater Co.	Gold
Tires .....	Midvale	Locomotive Super-heater Co.'s super-heater on 2 engs.
Tubes .....	Charcoal iron	Cyls. on these engs. will be 24 in. x 28 in.
Valve gear .....	Walschaerts	Midvale
Wheel centers .....	Cast steel	Charcoal iron
Stay bolts .....	Tate flexible	Walschaerts
Throttle .....	Chambers	Cast steel
Frames .....	Vanadium steel	Tate flexible
		Chambers
		Vanadium steel



## CAR BUILDING.

THE UNITED TRACTION Co., Albany, N. Y., has ordered 12 street cars from the Pressed Steel Car Co.

THE GREAT NORTHERN has ordered 1,000 40-ft. long, 40-ton capacity box cars from the Haskell & Barker Car Company.

THE MEXICO NORTH WESTERN, reported in the *Railway Age Gazette* of June 16 as being in the market for 500 logging cars, has ordered this equipment from the Bettendorf Axle Co., with an option for 100 more cars after January 1. The cars are to be all steel, 40 ft. long, and to have a capacity of 40 tons.

THE SOUTHERN RAILWAY, as mentioned in the *Railway Age Gazette* of April 28, has ordered 35 all-steel passenger cars from the Harlan & Hollingsworth Corporation; 10 all-steel combination passenger and baggage cars from the St. Louis Car Company, and 20 steel underframe postal cars from the American Car & Foundry Company. The inside measurements of the 35 passenger cars will be 66 ft. long, 8 ft. 10 $\frac{3}{4}$  in. wide, and the overall measurements will be 74 ft. 8 $\frac{3}{4}$  in. long; 9 ft. 10 $\frac{1}{4}$  in. wide, and 14 ft. 1 $\frac{3}{8}$  in. high, from rail. The inside measurements of the 10 passenger and baggage cars will be 65 ft. long, 8 ft. 10 $\frac{3}{4}$  in. wide, and the overall measurements will be 74 ft. 4 $\frac{1}{4}$  in. long; 9 ft. 10 $\frac{1}{4}$  in. wide, and 14 ft. 1 $\frac{3}{8}$  in. high, from rail. The 20 postal cars are to have wood bodies and steel underframes. The inside measurements will be 60 ft. long, 9 ft. wide, and the overall measurements will be 63 ft. 4 in. long, 9 ft. 10 $\frac{1}{4}$  in. wide, and 14 ft. 2 in. high, from rail. The special equipment on all three types will be identical, except where indicated.

Axles .....	Open hearth steel.
Bolsters, body .....	Built in.
Bolsters, truck .....	Commonwealth.
Brakes .....	Westinghouse.
Brake beams .....	Waycott.
Brake shoes .....	American Brake Shoe & Foundry Co.
Brasses .....	Ajax.
Couplers .....	McConway & Torley.
Curtain Fixtures .....	Pass., Pass. and Bagg., Curtain Supply Co.
Curtain material .....	Pass., Pass. and Bagg., Pantasote.
Draft gear .....	Miner friction.
Dust guards .....	Harrison.
Heating system .....	Gold Combination Straight Steam and Vapor.
Journal boxes .....	Symington.
Lighting system .....	Electric.
Paint .....	Lowe Bros.
Platforms .....	{ Pass., Pass. and Bagg., steel. Postal, short.
Seat covering .....	Pass., Pass. and Bagg., Plush, Chase's crimson.
Side bearings .....	Wood's single roller.
Springs .....	Pittsburgh Spring & Steel Co.
Trucks .....	{ Pass., Pass. and Bagg., Commonwealth all steel, 6 wheel, 4 $\frac{1}{4}$ in x 8 in. journals. Postal, Commonwealth all steel, 6 wheel, 5 in. x 9 in. journals.
Vestibules .....	{ Pass., wide enclosed. Pass. and bagg., wide enclosed on pass. end. Postal, Pullman type.
Vestibule diaphragms .....	Ajax.
Vestibule trap doors .....	Pass., Pass. and Bagg., Edwards.
Wheels .....	Rolled steel.
Window fixtures .....	{ Pass., Pass. and Bagg., Edwards. Postal, A. C. & F. Co.
Buffer device .....	Miner friction.

## IRON AND STEEL.

THE WABASH RAILROAD has ordered 2,500 tons of rails from the Illinois Steel Company.

THE PHILADELPHIA & READING has ordered 4,000 tons of Bessemer rails from the Maryland Steel Company.

THE NATIONAL RAILWAYS OF HAYTI are said to have ordered 8,000 tons of rails from the Lackawanna Steel Company.

THE CANADIAN CAR & FOUNDRY COMPANY has ordered 50,000 tons of structural steel from the United States Steel Corporation.

The Japanese government's plans for railway extension in the future contemplate an outlay of \$676,000,000, it is said, of which at least \$530,000,000 has to be borrowed—largely from abroad. This scheme represents a program of some 30 years' duration, but the portion of the project to be carried out at once extends over a period of about 13 years and involves an expenditure of \$238,000,000. About \$63,000,000 of this is to be derived from profits on ordinary railway traffic, but the remaining \$175,000,000 will come from abroad. According to the present arrangement the government will spend about \$15,000,000 annually on railway extension.—*Consular Report.*

## Supply Trade News.

The Korean Railways have ordered 50 tons of staybolt iron from the Falls Hollow Staybolt Company, Cuyahoga Falls, Ohio.

The Philadelphia Locomotive Works, recently incorporated to take over the Baldwin Locomotive Works, has filed notice of an increase of its capital to \$40,000,000. This sum is twice the amount of the capital of the old company.

Announcement has been made that George C. Jerome has bought all the rights and interests of A. B. Elliott, in the firm of Jerome & Elliott, and that the business will hereafter be conducted under the name of the Jerome Metallic Packing Company, at 1120 West Monroe street, Chicago.

The Asbestos Protected Metal Company has opened a new plant for making asbestos protected metal and weatherproof non-rusting skylights at Beaver Falls, Penn. The executive offices of the company have been removed and all communications should hereafter be sent to the above address.

In the new Chicago & North Western passenger station recently opened at Chicago, some 25 Sirocco fans of various sizes, made by the American Blower Co., Detroit, Mich., have been installed in connection with the ventilating system, also two of the disc fans made by this company.

Judge Dyer, sitting in the United States Court, at St. Louis, Mo., has rendered a decision in favor of the Scullin-Gallagher Iron & Steel Company, St. Louis, Mo., in the case of the American Steel Foundries vs. the Scullin-Gallagher Iron & Steel Company for infringement of patents on the Hardie side frame by the Wolff truck frame. The case was dismissed on the grounds that there was nothing novel or patentable in the Hardie device.

## Electrification with 1,500 Volts D. C.

The Westinghouse Electric & Manufacturing Company has taken a contract for the electrification of two sections of road of the Piedmont Traction Company in North Carolina and South Carolina, aggregating 130 miles of line. This is the first railway electrification in America to be equipped with apparatus for 1,500 volts direct-current. A number of lines are now operated on 1,200 volts, but this is the first one to contract for 1,500-volt equipment. One section is 35 miles long, from King's Mountain, N. C., to Charlotte; and the other is 95 miles from Greenwood, S. C., to Spartanburg, S. C., with a 10-mile branch from Belton to Anderson. The power for both lines will be bought from the Southern Power Company and fed to the line through motor-generator sets in sub-stations. There will be sub-stations at Charlotte, Gastonia, and King's Mountain, each equipped with one 500 Kw. motor generator set; and at Dead Falls, Belton, Anderson, Greenville, Greers and Spartanburg, requiring seven 500 Kw. motor-generator sets and two of 300 Kw., together with transformers, etc. Four classes of service will be maintained on both of the roads, namely, express passenger, local passenger, light freight and express, and heavy freight service.

## TRADE PUBLICATIONS.

RAILWAY TELEPHONES.—"Our Contribution," is the title of a leaflet which has been issued by the Western Electric Company, New York and Chicago, filled with pictures illustrating the variety of instruments and apparatus which the company has made for railways during the past few years.

TRANSFORMER.—The Crocker-Wheeler Company, Ampere, N. J., has issued a small booklet on the Remek transformers, which illustrates and shows the gain in efficiency in these transformers. Among other things is a table showing the comparative efficiency of the leading transformers on the market.

DENVER & RIO GRANDE.—The passenger department of the Denver & Rio Grande has issued an illustrated booklet, written by Edwin L. Sabin, entitled "The Peaks of the Rockies," describing the scenery in these mountains and containing a list of the mountain ranges and peaks, with the altitude of the latter and the names of the nearest railway stations. There is also a map showing the location of the principal peaks in Colorado, Utah and New Mexico.

## Railway Construction.

### New Incorporations, Surveys, Etc.

**ALMA RAILWAY.**—See Maxton, Alma & Southbound.

**ARIZONA EASTERN.**—Contract has been given to the Grant Brothers Construction Company, it is said, for building an extension from Mesa, Ariz., to Chandler ranch, 12 miles.

**ATCHISON, TOPEKA & SANTA FE.**—This company has begun operating the section of the Texico-Coleman cut-off between Sweetwater, Tex., and Lamesa, to a connection with the Pecos Valley division from Lamesa to Canyon. The section between Coleman and Sweetwater has been finished for several months, and the link between Lamesa and Texico, N. Mex., is expected to be finished by November. (May 12, p. 1132.)

**BEAUMONT & GREAT NORTHERN.**—This company is planning to build an extension, it is said, from Livingston, Tex., southeast to Beaumont, about 100 miles, and the line is eventually to be extended from the northern terminus at Weldon, northwest to Waco.

**CANADIAN NORTHERN.**—Bids are wanted by Mackenzie, Mann & Co., Toronto, Ont., until July 1, for work on sections as follows: Port Arthur, Ont., to a point on the boundary between the districts of Thunder Bay and Algoma; from the end of Section 1 to Kapuskasing lake and Kapuskasing lake to Sellwood Junction.

**CANADIAN PACIFIC.**—An officer writes that a contract has been given to Dutton & Timson, Winnipeg, Man., to build a 32-mile line from Wilkie, Sask., northwest.

**CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.**—An officer writes that the new extension from Mount Carmel, Ill., to Evansville, Ind., 32.21 miles, is to be opened for operation on July 1. The line is of high-grade permanent construction with maximum curvature of 1 deg., except within the city limits of Evansville. Maximum grade northbound is 0.03 per cent.

**CROSBYTON-SOUTHPLAINS.**—An officer writes that this company, which operates a 38-mile line from Lubbock, Tex., east to Crosbyton, will build an additional 30 miles as soon as surveys are completed. Some of the work will be heavy, there will be a 100-ft. steel bridge and other bridge work. (April 28, p. 1016.)

**ELBERTON & EASTERN.**—Incorporated in Georgia with \$500,000 capital, and office at Elberton, Ga., to build about 50 miles of railway. The projected route is from Elberton, south to Washington, Wilkes county, thence east to Lincolnton. W. O. Jones, L. M. Heard, W. F. Anderson, J. H. Blackwell and Z. B. Rogers, Elberton; W. J. Adams and J. A. Morse, Tignall, and M. A. Pharr, Washington, are incorporators.

**GRAND TRUNK.**—An officer is quoted as saying that this company will build in the near future an additional line to Ottawa, Ont., but it has not yet been decided whether the line will be built from Kingston or Brockville.

**GREENVILLE, SPARTANBURG & ANDERSON.**—See Piedmont Traction Company.

**HUMMELSTOWN & CAMPBELLSTOWN (Electric).**—See Lebanon & Campbellstown (Electric).

**ILLINOIS ROADS.**—An officer of the Northern Illinois Industrial Company writes that it is the intention of that company to build a belt line railway encircling the cities of North Chicago, Ill., and Waukegan, to supply switching facilities to industries in that manufacturing district. The necessary right-of-way is being secured, and it is expected that part of the line will be in operation this coming fall. C. E. Sayler, president, Chicago.

**LEBANON & CAMPBELLSTOWN (Electric).**—Rights-of-way have been secured and construction work will be started soon on a 12-mile line. This is to be an extension of the Hummelstown & Campbellstown, and will provide a through route for electric lines from Harrisburg, Pa., to Lebanon.

**LEHIGH VALLEY TRANSIT.**—An officer writes that contracts have been let to Joseph Neapoliano, Johnstown, Pa., for building a cut-off at Sellersville, 1.25 miles, and another cut-off at Perkasio, 1.25 miles, on which work is now under way. Maximum

grades will be 6 per cent., and maximum curvature 6 deg. There will be about 12,000 cu. yds. of grading per mile. The work calls for four plate girder bridges and a tunnel under the main tracks of the Philadelphia & Reading, at Perkasio. There will be brick and concrete passenger stations at Sellersville and at Perkasio, each one story high, 18 ft. x 46 ft., to cost about \$3,000 each, for which bids have not yet been asked. (June 9, p. 1334.)

**MAXTON, ALMA & SOUTHBOUND.**—An officer writes that this company has taken over the rights and property of the Alma Railway, which operates a line from Alma, N. C., to Midway, seven miles. Beyond Midway the line was operated as a logging road. The new company expects to build a 15-mile extension from Alma. At present only freight trains are in operation between Alma and Midway, but when the extension is built the completed line is to be opened for passenger service. Connection is to be made with Maxton over the Seaboard Air Line tracks. C. J. Cottingham, general manager, Alma.

**MISSOURI, OKLAHOMA & GULF.**—Announcement has been made that construction work will be started about October 1 on an extension of between 200 and 250 miles. The proposed route is from Denison, Tex., southwest to Dallas and Fort Worth, on the south, and from Muskogee, Okla., on the northern end, west to Oklahoma City. The line is eventually to be extended from the present northern terminus at Wagoner, Okla., either to Pittsburg, Kan., or Joplin, Mo. Surveys have been made also from both these places to Kansas City. (December 23, p. 1204.)

**MISSOURI PACIFIC.**—An officer is quoted as saying that improvements are to be made on the Central branch and the line from Topeka, Kan., to Fort Scott. The main line through Kansas is also to be improved. New heavier rail is to be laid on the more important branches, the grades and curvature reduced, and some bridge improvement work is also to be carried out. A large amount of ballasting is included in the improvements, also a new station at Topeka.

**NEW YORK, WESTCHESTER & BOSTON.**—An officer writes that this company, which is a consolidation and merger of the New York, Westchester & Boston Railway Company and the New York & Port Chester, succeeded to all the rights and privileges granted those two corporations, holding a charter to build a high speed electric line from the Harlem river through the borough of the Bronx, New York City, to Port Chester, with a branch from Mount Vernon, north to White Plains. The main line starts at Lincoln avenue, New York City, between 132d street and the tracks of the New York, New Haven & Hartford, continuing through the borough of the Bronx to 180th street and Morris Park avenue, at which place the company intends to establish a transfer station for the interchange and distribution of passengers between its own line and the Interborough, both the subway and the extended third-track elevated service. From 180th street the line passes through the eastern section of the borough of the Bronx, through Morris Park to the Mount Vernon line, with stations at White Plains Road, Morris Park, Pelham Parkway, Allerton avenue, Gun Hill Road, Baychester avenue and Dyre avenue, and at Kingsbridge Road, near Merritt avenue, in Mount Vernon. The line will continue through Mount Vernon, with stations at East Sixth street, East Third street and Columbus avenue to the east line of that city, near Lincoln avenue, where the road divides, one line going easterly to New Rochelle, and a map issued by the company shows this line extended to Port Chester. The other line is being built northerly through Mount Vernon, New Rochelle and Scarsdale to White Plains. Construction of the line is proceeding rapidly under contracts with the O'Brien Construction Company, New York; Lathrop & Shea, Mount Vernon; Merritt & Gilbert, New Rochelle, and Henry Steers, Inc., New York. Stations of concrete are being built under contracts with William Dickinson, Murray Brothers, Snare & Triest and Cauldwell & Wingate. The work in the upper part of the Bronx and in Westchester county is heavy. Maximum grades will be 1 per cent. and maximum curvature 6 degrees. There will be 67 steel bridges and viaducts, ranging from a 20-ft. span to a 2,800 ft. viaduct. There will also be two viaducts each 700 ft. long; four concrete arches, varying in length from 20 ft. to 65 ft., and a subway, 4,000 ft. long. The line is being built entirely on private right-of-way. Work has been finished on all four tracks over a section of about six miles. The electrification will be A. C.



system and it is expected that a considerable portion of the line will be in operation before the end of the present year. L. S. Miller, president; T. D. Rhodes, vice-president; J. L. Crider, chief engineer, and John Roberts, signal engineer, all with offices at New York. The company's charter gives it the right to build a branch from West Farms, southeast, thence east, via Clason Point to Throgg's Neck, but no work is being done on that branch at present, as every effort is being made to finish the main line and the line to White Plains. The road will be a four-track high-speed electric line with frequent trains, and will be equipped with steel cars of the latest type.

**OMAHA, SIOUX CITY & NORTHERN.**—A contract has been given to the Kansas Construction & Irrigation Company, Garden City, Kan., to build from Omaha, Neb., north via Blair, Tekamah and Decatur to Sioux City, Iowa, 90 miles. B. M. McCue, president; B. L. Allen, chief engineer. E. A. Tennis, Garden City, Kan., is interested in the project.

**OREGON SHORT LINE.**—This company has finished work on the cut-off at Wendell, Idaho. It is said that the construction between that place and Jerome will be finished, and the cut-off between Rupert and Bliss will be open for traffic July 4.

**PIEDMONT TRACTION COMPANY.**—An officer writes that under this name a line is to be built from Charlotte, N. C., west via Mount Holly, Gastonia and Kings Mountain to Grover, thence under the name of the Greenville, Spartanburg & Anderson through South Carolina, from Blacksburg, via Gaffney, Spartanburg, Greenville and Belton to Greenwood. All contracts are let, except for the section from Spartanburg, S. C., to Grover, N. C., to W. J. Oliver & Co., Greenville, S. C., and to Stewart & Jones, Gastonia, N. C. Some of the work will be heavy. Maximum curvature will be 6 deg. There will be a number of bridges, as the line will cross many streams. J. B. Duke, president, New York, and W. S. Lee, vice-president, Charlotte, N. C. The company owns and operates a nine-mile line between Belton, S. C., and Anderson.

**ST. LOUIS & SAN FRANCISCO.**—A contract is said to have been entered into by this company with residents of Mason, Tex., to build an extension of the Fort Worth & Rio Grande division, from Brady to Mason, 27 miles. It is understood that the line will be extended eventually from Mason to Waring, which is about 100 miles from Brady.

**SOUTHERN PACIFIC.**—Bids will soon be asked for building a 16-mile section of the proposed line from Glamis, Cal., to the Palo Verde valley.

**TENNESSEE, ALABAMA & GEORGIA.**—An officer writes that the Tidewater Development Company will not take over the property and rights of the Tennessee, Alabama & Georgia, as was recently stated in these columns, nor are any negotiations pending with this end in view.

**TEXAS ROADS.**—A line is to be built through timber lands near the Sabine river in San Augustine and Sabine counties, Tex. The proposed route is from Broadus, via Hemphill to Sabintown, about 50 miles. W. H. Knox, Livingston, who owns extensive timber lands along the proposed route, is back of the project.

**TWIN MOUNTAIN & POTOMAC.**—Organized in West Virginia with \$100,000 capital, to build from McNeill, Hardy county, W. Va., on the Hampshire Southern, to Twin Mountain, Grant county. It is expected to begin construction work on the line this summer. The incorporators are residents of Fairmont, W. Va.

**WABASH-PITTSBURGH TERMINAL.**—See Wheeling & Lake Erie.

**WHEELING & LAKE ERIE.**—According to press reports, plans are now under way for carrying out extensive improvements on this line and on the Wabash-Pittsburgh terminal. The improvements include double-tracking work on the main line between the Ohio river and Toledo, Ohio, and a number of new passenger stations are to be put up.

**WINNIPEG, SALINA & GULF.**—An officer writes that this company expects to begin actual construction work in August, at Okeene, Okla.; Turon, Kan., and at Salina. It is expected to have at least 10 miles finished and in operation by September, when financial arrangements will be made and contracts let for

building the entire line. The plans call for building from Winnipeg, Man., south to the gulf of Mexico, 1,500 miles. The company has just given a contract to the Beaumont Lumber Company, Beaumont, Tex., for 300,000 ties, to be delivered at Oklahoma City, Okla. The ties are to be used on the line from Oklahoma City to Okeene. H. Leone Miller, president. The engineering work is in charge of special engineer, H. E. Wylie, Salina. (February 24, p. 369.)

## RAILWAY STRUCTURES.

**BATON ROUGE, LA.**—See Memphis, Tenn.

**EDMONTON, ALB.**—See Winnipeg, Man.

**ELMIRA, N. Y.**—The Delaware, Lackawanna & Western, it is said, will build a 10-stall roundhouse of brick and steel construction, with a 90-ft. turntable, at Elmira.

**JACKSONVILLE, FLA.**—An officer of the Seaboard Air Line writes regarding the reports that that company will soon begin work on terminal improvements, including a number of warehouses to be built on the river front at Jacksonville, that nothing definite has yet been decided regarding this work. The improvements as planned will cost \$100,000.

**LOS ANGELES, CAL.**—The San Pedro, Los Angeles & Salt Lake has taken out a permit for an addition to the freight house at Los Angeles.

**MEMPHIS, TENN.**—An officer of the Illinois Central writes that the plans call for building a new brick and stone passenger station at Memphis, on Calhoun street, to be three stories high, 110 ft. x 250 ft. It has not yet been decided when bids will be asked for the work, which will cost about \$500,000. It is reported that this company will also build a passenger and freight house at Baton Rouge, La. (March 31, p. 816.)

**PASADENA, CAL.**—The Southern Pacific and Pacific Electric Railways, it is said, will build a new station on the site of the present station at Pasadena.

**PERKASIE, PA.**—See Lehigh Valley Transit under Railway Construction.

**PORTLAND, ORE.**—The Portland Railway, Light & Power Company, it is said, is building a new freight station and office building at Portland, to cost \$70,000.

**PRINCE RUPERT, B. C.**—See Winnipeg, Man.

**ROCHESTER, N. Y.**—An officer of the New York Central & Hudson River writes that work on the station at Rochester, which was commenced last year, is being continued, and bids are now being opened for partial construction of the station. The work will require about 1,000 tons of fabricated steel. It is expected that the station will be finished some time during 1912.

**SEATTLE, WASH.**—The Northern Pacific is having plans made to carry out alterations and additions to the pier at Seattle, at a cost of \$100,000.

**SELLERSVILLE, PA.**—See Lehigh Valley Transit under Railway Construction.

**TOPEKA, KAN.**—See Missouri Pacific under Railway Construction.

**UPLAND, CAL.**—The Atchison, Topeka & Santa Fe Coast Lines will enlarge the passenger and freight station at Upland.

**VANCOUVER, B. C.**—The Great Northern will spend a large amount of money for reinforced concrete docks, piers and warehouses, it is said, on Burrard Inlet. About 2,000 ft. frontage has been secured by the railway.

**WELDON SPRINGS LANDING, MO.**—A bill has been introduced in the lower house of Congress authorizing the St. Louis, Kansas City Electric Railway to build a bridge over the Missouri river at Weldon Springs Landing.

**WINNIPEG, MAN.**—Contracts are to be let at once by the Grand Trunk Pacific for a new hotel at Winnipeg, also for a hotel at Edmonton, Alb., and a new dock is to be built at Prince Rupert, B. C.

**WOODLAND, CAL.**—The Southern Pacific is building a new station, it is said, at Woodland.

## Railway Financial News.

**ATHENS & TELlico.**—See Louisville & Nashville.

**ATLANTIC COAST LINE.**—J. P. Morgan & Co., New York, are offering \$3,000,000 unified mortgage 4 per cent. bonds of 1909-1959 at 93. The total outstanding unified mortgage bonds, including the present issue, is \$6,167,000.

**ATCHISON, TOPEKA & SANTA FE.**—On June 2, trading was begun in the \$10,000,000 common stock of the Santa Fe, which was recently listed in the official market of the Paris Bourse.

**BALTIMORE & OHIO.**—The directors have deferred action on the common stock dividend due September 1.

**BOSTON & MAINE.**—The company has sold one year 4 per cent. notes to the amount of \$5,000,000 to the First National Bank of Boston. The proceeds of the notes are to be used partly for the purchase of stock of the Worcester, Nashua & Rochester (the absorption of which has just been approved) and partly for improvements.

**CAROLINA, CLINCHFIELD & OHIO.**—Rumors that this road will be leased to the Chesapeake & Ohio and the Seaboard Air line jointly, for a long term of years, continue to find credence in New York financial circles; and statements to that effect are made with increasing confidence.

**DELAWARE, LACKAWANNA & WESTERN.**—Stephen Palmer and J. S. Talmadge of New York, have been elected directors.

**DENVER, NORTHWESTERN & PACIFIC.**—The holdings of the estate of the late D. H. Moffat in this company have been transferred to the Denver Railway Securities Company. According to a press despatch from Denver, the amount of money thus far expended on the construction of the road is \$14,000,000, and of the securities issued for that expenditure the amount acquired by the new company is \$10,181,818. The president of the Denver Railway Securities Company is W. G. Evans.

**DENVER & RIO GRANDE.**—The directors last week decided to declare no dividend at present on the non-cumulative preferred stock amounting to \$49,779,800; nor on the common stock. President Jeffery says that the gross receipts for the current fiscal year will be about the same as for the preceding year, and the net revenue, exclusive of taxes, about \$7,500,000, as compared with \$7,779,467 last year. Operating expenses now include depreciation charges, as required by the Interstate Commerce Commission. These amount to \$500,000, so that but for this change in accounting the surplus this year would probably be about the same as last year. The company has no floating debt, but having guaranteed the interest on the first mortgage bonds of the Western Pacific, it was decided that the money which would otherwise go to the holders of the preferred stock should be used to pay the interest, September 1, on the fifty millions of Western Pacific bonds.

**INDIANAPOLIS UNION.**—The Belt Railroad & Stockyards Company, leased to the Indianapolis Union, has filed with the secretary of state of Indiana a certificate providing for the increase of its common stock from \$1,000,000 to \$2,000,000. Half of the increase is to be issued to the common stockholders as a stock dividend, while the other half is to be sold to provide funds for the enlargement of the stockyards and other improvements to the property.

**LOUISVILLE & NASHVILLE.**—The Athens & Tellico Railway, which for some time has been controlled by Louisville & Nashville interests, will become a part of the Louisville & Nashville on July 1. The road extends from Athens, Tenn., eastward to Tellico Plains, Tenn., 24 miles. It crosses the Atlanta line of the Louisville & Nashville at Englewood.

**NATIONAL RAILWAYS OF MEXICO.**—The new minister of finance, at Mexico City, says that the National Railways will pay the usual dividend of 4 per cent. on the preferred stock, in spite of the losses incurred during the revolution. For the month of May the receipts were two million pesos less than in May of last year.

**NEZPERCE & IDAHO.**—The Farwell Trust Company, Chicago, is offering at par a block of first mortgage 6 per cent. bonds of February 1, 1910, due serially. Of the total authorized issue of \$300,000 the amount outstanding is \$125,000. The com-

pany operates 15 miles of line running from Vollmer on the Grangeville branch of the Northern Pacific to Nezperce, Idaho. The territory served, according to a statement by the president, includes 90,000 acres of grain and agricultural lands heretofore without transportation facilities. The organization and building of the road originated with the residents and the property owners within this territory. Arrangements have been made with the Northern Pacific for exchange of freight.

**OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY.**—Subscribers to the \$12,500,000 stock reserved for New York, of the \$25,000,000 first and refunding mortgage guaranteed 4 per cent. bonds recently offered in this country and abroad, received, it is said, allotments averaging about 10 per cent. of their subscriptions.

**PENNSYLVANIA COMPANY.**—The stockholders of the Cleveland & Pittsburgh have authorized the increase of the capital stock of that company from \$22,000,000 to \$40,000,000.

**PENNSYLVANIA LINES.**—The stockholders of the Toledo, Walhonding Valley & Ohio, have approved the proposition to consolidate that company with the Cincinnati & Muskingum Valley; the new company to be called the Toledo, Columbus & Ohio River Railroad. Both of the constituent companies are parts of the Pennsylvania system west of Pittsburgh; the first-named being the Toledo division of the Northwest system, and the other a part of the Southwest system.

**SOUTHERN PACIFIC.**—The Galveston, Harrisburg & San Antonio has applied to the railway commission of Texas for authority to register \$7,504,785 in bonds under the mortgage on the Galveston-Victoria division. Of the bonds named, the sum of \$203,000 is to provide for the company's share of the cost of the causeway at Galveston, the money to be paid to Galveston county; and \$1,197,300 is to be used for cars and engines for the Galveston-Victoria division.

**TOLEDO, COLUMBUS & OHIO RIVER.**—See Pennsylvania.

**WESTERN MARYLAND.**—This company has applied to the Public Service Commission of Maryland for authority to issue first mortgage bonds to the amount of \$4,114,000. The bonds are a part of the issue of fifty millions which has been underwritten by a syndicate headed by Blair & Co., of New York. Bonds of the West Virginia Central & Pittsburgh to the amount of \$3,250,000 due on the first of next month, and bonds of the Piedmont & Cumberland amounting to \$650,000, due August 1, are to be retired with a part of the proceeds of the new issue.

### FOREIGN RAILWAY NOTES.

The railway from Ligua, Chili, to Papudo has been opened for business, also the line from San Bernardo to Volcan.

A special car for transporting live fish has been built in Saxony for a firm of fish merchants in Zwickau. The water in the tank of the car is kept aerated by means of a motor working a pump. With this the fish are kept alive on long routes, some coming from southern Russia.

Work on the railway from Baro, on the Niger, in Northern Nigeria, has been finished to Kano, 400 miles. This brings Kano within four days of the seacoast, about 900 miles distant, and will do much to develop the rich natural resources of the country through which it runs. It will also facilitate the rapid opening up of the Bauchi tin fields and will greatly increase the export of tin. The government has taken active measures for the immediate construction of a branch from the Baro-Kano railway to the foot of the plateau in the Bauchi district.

The hatpins must go! The management of the Saarbrück division of the Prussian State Railways has notified ladies who come to its stations with long hatpins protruding, manifestly dangerous in crowds, that they must remove these pins or muffle the points thereof. Station employees are directed, without waiting for complaints from other passengers, to enforce this regulation. "She who does not obey the instructions of the employees in this matter, may, according to Section 11 (1 and 2) of the Railway Regulations, be excluded from the trains and required to leave the station. Disobedience of the orders of the railway employees may be punished by fine as per Sections 77-81 of the Railway Regulations."